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Archives of Dermatology and Syphilology

VOLUME 22 AUGUST, 1930 NUMBER 2

THE SYPHILOLOGY OF TODAY AND TOMORROW

A SPECULATIVE AND CRITICAL APPRAISAL *

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PHILADELPHIA

The Apocrypha, in the 44th of Ecclesiasticus and Wisdom IV,[1] has given us eloquent stanzas in which to express the memorial spirit of this occasion:

Let us now praise famous men
By whom the Lord hath wrought great glory
* * *
Leaders of the people by their counsels
* * *
Men richly furnished with ability
Living peaceably in their habitations:
All these were honored in their generations,
And were the glory of their times.
Yea, they were men of mercy,
Whose righteous deeds have not been forgotten.
Their bodies are buried in peace,
But their name liveth forever more.
For the memorial of virtue is immortal
* * *
When it is present, men take example of it
And when it is gone, they desire it:
And throughout all time it marcheth crowned in triumph
Victorious in the strife for the prizes that are undefiled.

With what better words can one revive the memory of a distinguished man? And by what better means can we, gathered tonight, do honor to his statesman's genius than in an attempt to review the present and infer the future in a great issue of the public health? To one of those who knew, even in a small way, the penetrating insight and uncompromising genuineness of the many-sided personality of Hermann Biggs,

* Submitted for publication, Feb. 27, 1930.

* The Hermann M. Biggs Memorial Lecture for 1929, given under the auspices of the Medical Society of the County of New York and the New York Tuberculosis and Health Association, at the New York Academy of Medicine, Nov. 25, 1929.

1. From the rendering by U. G. B. Pierce in "The Soul of the Bible," American Unitarian Association, 1908.

a moment of prayer in this responsibility may be forgiven. With it comes a moment of shrinking from the demands of a task which, while it had begun to attract his interest, has been left to a later generation for execution. For Hermann Biggs, famous for his achievements in the control of tuberculosis, was deeply concerned with the problems of venereal disease and social hygiene. Perhaps it is in recognition of that fact that a student of syphilis and an interested spectator in the field of social hygiene has been asked to make this address.

THE STATUS OF SYPHILIS TODAY

The syphilologist, working in his nether region among the fumes that inspire what Colonel Harrison has so aptly called the "venereal disease nausea," looks up with wonder, and not without envy at times, at the light of public approval and interest glancing from the helms of public health legionaries as they march to the final conquest of minor plagues, such as diphtheria and typhoid fever. For the worker with the venereal diseases, there is no such glamor in the public eye. The reverberations of his figures are muffled in the hat of press censorship, bashed down over his ears. His elder brother, the tuberculosis worker, stalks by, a noble brow above a toga richy dyed with the royal purple of martyrs' blood and lighted by the spotlights of many a Christmas seal campaign. Syphilology is still in the overalls stage. Have you leaned over the rail of a liner at sea as the captain, flanked by his staff of chart-house aides, resplendent in gold braid, comes down the deck? And, leaning, have you seen the grimy head of a stoker pop through some scuttle just above the water line, to be followed by the "spish-sh-sh-kerplop" of a torrent of ashes shot from a vent below him? You glimpse the status of syphilis and of the control of venereal disease in general in the contrast.

I offer only one arresting group of figures to prove the stokehold the equal of the bridge. For them I am indebted to Commissioner Bigelow of Massachusetts. There is an enormous occult element in the statistical data purporting to disclose the prevalence of a long latency infection like syphilis, and figures based on notification, therefore, undoubtedly understate the facts. Yet in the area of the United States in which syphilis has been reportable since 1920, there have been 35,000 more cases of syphilis reported than of scarlet fever; 79,000 more than of all forms of tuberculosis; 500,000, or nearly one-third more cases of syphilis than of diphtheria; three times as much syphilis as smallpox, and five times as much syphilis as typhoid fever. Contrast the public reactions to all the diseases named except syphilis and the support given to the public health movement against them with the status of the movement against syphilis and you are in touch with the problem of syphilologists. A typhoid carrier can all but be

imprisoned for life, but how rarely a syphilis carrier! Where can one find a great street car corporation which will placard its cars "Have yourself examined for syphilis and treated to a cure if you have it," as one of them not so long ago placarded the Dick and Schick test to the public eye? Where, until perhaps a year ago, could one find men of wealth to give substantial and generous support to the study of syphilis?

Is syphilis controllable in the public health sense? Both by direct and indirect reasoning it appears, as a result of observations made during the past decade, that it is controllable by treatment of the infected person. True, the incidence of syphilis has shown periodic and in some ways inexplicable fluctuations in the past. Such fluctuation in an upward direction is now going on in parts of France.[2] But over the larger part of the rest of the continent and in Great Britain, a fall in incidence since 1918 has taken place which seems far in excess of any fortuitous variation of which there is past experience. So marked is this drop that one may almost foresee the extinction of the disease, given sufficiently continuous application of present methods. Undoubtedly factors unconsidered at the present time will arise to defeat to some degree the complete consummation of that beneficial end, but the reduction of the disease to a state of low grade and comparatively controlled endemicity is a great gain over what might almost be styled the epidemicity of a decade ago. When one can speak of local foci and can apply intensive research to their abolition, instead of having to tar the whole world in broad strokes with the venereal brush, something notable will have been gained.

The figures that seem to justify optimism are based first on an indirect process of reasoning on British experience carried out by Colonel Harrison[3] of the Ministry of Health. By studying the declining incidence of dementia paralytica, blindness due to venereal disease, the number of certified deaths due to congenital syphilis, certain figures on army and navy incidence of new infections at home and abroad and cases of syphilis seen in clinics with an increase in attendance, he concluded that the incidence of new infections with syphilis has decreased five-sixths since 1918. Still more impressive, because based on a more direct type of investigation, are the results, summarized by several spokesmen[4] including Jadassohn,[5] of the census of venereal disease recently conducted in Germany, with the evident whole-hearted cooperation of the medical profession. This survey indicates that there

2. Jeanselme and Burnier: Bull Acad. de méd., Paris **100**:749, 1928. Gougerot and Burnier: Ann. d. mal. vén. **4**:275, 1929.

3. Harrison, L. W.: J. Social Hyg. **15**:193, 1929.

4. Roeschmann, H.: Deutsche med. Wchnschr. **54**:1132, 1928.

5. Jadassohn, cited by Baudel: München. med. Wchnschr. **76**:463, 1929.

has been a reduction of about one-half in all forms of venereal diseases in the German republic between 1919 and 1927. The reduction of gonorrhea and congenital syphilis amounts to about one-third; of primary and secondary syphilis, two-thirds; of chancroid, nine-tenths.

AMERICAN STATISTICS

I wish that it could be my privilege to cite authentic figures pointing to a corresponding reduction in the incidence of venereal disease in the United States. Unfortunately, so far as I know, they do not exist. There is a reduction in the death rate due to dementia paralytica, but there are obviously several interpretations possible. The impression is general among clinicians that there is some reduction in new cases of syphilis. My clinic has recently found this situation to be apparently at the bottom of a fall in attendance. It is to be hoped that the numerous so-called one day censuses [6] taken during the past several years in large cities of this country will provide a base-line for the demonstration of a progress similar to that of Europe. Such a demonstration will be most important, for on it must depend, ultimately, the appraisal of the worth of an individualistic, practitioner's scheme of dealing with syphilis, as compared with a state-controlled clinic system or a panel or health insurance organized plan of attack on the disease. In the discussion which is to ensue, then, let it be recalled that the existing American system is being considered hypothetically, for its actual comparative worth is as yet undemonstrated.

TUBERCULOSIS VERSUS SYPHILIS

Before proceeding to a discussion of practitioner versus clinic in the attack on syphilis or of other aspects of the attack problem, a comparison may be drawn between the situations with respect to tuberculosis and syphilis which illuminates some features in the movement. I do this in part because there is already evidence that the older will influence the newer movement, and that public health practice and research in syphilis will be invited to follow precedents set by the experience of the antituberculosis campaign. Their differences may be summarized thus.

There is no chemotherapy of tuberculosis that can within twenty-four hours, by a single application, as with the syphilologist's arsphenamines, reduce the condition in the overwhelming proportion of patients to noninfectiousness, and which, by repeated easily available applications, can apparently hold it to a noninfectious latency lasting for years if not for life. There is such a therapy for syphilis, and

6. Published at intervals in "Venereal Disease Information," United States Public Health Service, Washington, D. C.

from the standpoint of public health, though not necessarily that of the infected person, this gives one the key to the citadel and to the ultimate conquest of the disease as a widespread human ailment. In the immunologic field, vaccination did just this for smallpox. It is easy to see why a movement of farsighted proportions against tuberculosis must indeed go back to the beginning, and must break new ground by the study of the chemistry of its organism as a preliminary to an as yet uncharted line of attack. Such need exists in syphilis, but it is secondary and not primary. To place intensive investigation of the causative organism of syphilis first in a movement for public health control, as the students of tuberculosis are inclined to urge, while laudable as a scientific ideal in research syphilology, loses sight of the practicalities of actual life and the possibility of making vast conquests now. One who would do the most immediate good in today's public health situation with respect to syphilis would spend his money and his energy studying and popularizing the utilization of things already abundantly available for relief from the situation, to mop up later the ultimates, important to the final absolute comprehension of the disease and perhaps the absolute extinction of the last endemicity focus. The precedents of the National Tuberculosis Association, then, if I may say so, are not of such direct applicability to the problem of syphilis that they should be forced on its workers. The association's methods have undoubtedly broken new ground, and their applicability must be considered in approaching the bacteriology, pathology and immunology of syphilis; but, if I may repeat, they are of vastly less import in the public health campaign. It is my hope that before the chemical constitution of *Spirochaeta pallida,* or even the details of its life cycle, and the mechanism of heavy metal therapy are fully worked out in the laboratories, practical syphilology will have reduced the disease to a position of subordinate importance and perhaps almost academic interest.

CLINIC VERSUS PHYSICIAN

I have placed first, as the salient issue for study and constructive action in modern public health syphilology, the problem of the individual practitioner versus the organization in the management of the disease. Into this channel nearly all other courses lead. The issue has its ramifications in research, for what is the effect of simplification of diagnosis and treatment but to give the practitioner an advantage, and what does complexity do but force treatment into the hands of organizations that can carry the overhead and of specialists who have the insight and experience to direct diagnosis and treatment? The tendency is no different in this than in other aspects of medicine. It is, however, more acute. For in the field of venereal disease, the individual practitioner is

now on trial as he is nowhere else in medicine, and nowhere is his dominion harder pressed or more gravely threatened. If American experience does not promptly show that the individual practitioner's approach is securing the same results, percentage for percentage, that organized and socialized European experience is getting, the American public, or its venereal disease tenth, will stampede organizationward as it has in Chicago, leaving the academicians to wag their beards in futile protest. The practitioner versus the organization, whether state, industrial, insurance or merely big business, is the issue for the day.

Why is this issue so peculiarly acute for American practice? Because the United States is the chief remaining large scale example of an individualistic system. The initial demonstration of the effectiveness of present-day therapeutic methods has come, not from the United States, but from countries such as the Scandinavian and Great Britain, where treatment is almost completely controlled by the state, and where it is carried out under a clinic type of organization. Harrison estimates that very few persons with syphilis in Great Britain are treated by practitioners, and that less than one one-hundredth of the arsphenamine made is used outside of state control. In Germany the system is dominated by the Krankenkassen or sick benefit insurance organizations which, acting through individual enrolled practitioners, can apparently bring to bear a centralized command of resources and control of methods that is as effective as the British clinic system. Only the French and the Americans remain outside the pale of organization. In France the rate is going up, and from America there is as yet no convincing word of better things. In the United States, in spite of the existence of 671 clinics for venereal diseases,[7] of which 445 are aided by the state, approximately only 30 per cent of the venereal disease patients in the population receive treatment in them, while 70 per cent, even in large cities such as in the St. Louis area,[8] with presumably superior access to centralized facilities, are under treatment by independent practitioners. If the United States under a practitioner's régime cannot demonstrate accomplishment equal to that of the more organized medical work of the European countries, it will be the duty, unwelcome perhaps, of prime movers for the cause of reform to urge organization as the remedy. The merits and defects of practitioners' versus organization control of the problem of syphilis are therefore of immediate and genuine importance.

The term practitioner requires, in connection with work on venereal disease in this country, some special interpretation. While it appears that 80 per cent of the patients with venereal disease in the United

7. Figures supplied by the United States Public Health Service.

8. Ven. Dis. Inform. **10**:189 (May 20) 1929.

States are under the practitioner's care, surveys of the St. Louis area, for example, revealed a condition to some extent anticipated by individual impressions of the field. While 78 per cent of the patients with venereal disease in this area are under private care, 10 per cent of the private physicians are treating 60 per cent of the patients. In the country at large, 25 per cent of the private physicians treat 90 per cent of the private patients. It appears, therefore, that patients are not being cared for so much by practitioners at large as that a spontaneous and undirected growth of specialism is in process, not registered by national associations or by any official agency. Granted that this type of circumstantial specialist is good material, it may suffice, in attempting to popularize new and more effective methods of treatment, that an endeavor be made to reach him rather than the vast body of practitioners at large. To restrict thus the field for needed teaching and instructional and cooperative effort is an immense relief, as any one who has sought to impress medical method on student mass well realizes. On the other hand, Highman,[9] in some ingenious figuring, by setting as the limit of individual capacity the care of fifty syphilitic patients per physician per day, has suggested the probability that there are hardly enough physicians in the country and certainly not enough specialists to care for the estimated 5,000,000 syphilitic persons and the annual increment of 423,000 new cases of syphilis per year.

Turning from the hopeful possibilities of the self-developed or "just-growed" specialist to the practitioner at large, one finds it extremely difficult either to define or to reach him. The pharmaceutic house has, so far as syphilotherapy is concerned, developed practically the only effective instrument for reaching the practicing doctor, in the detail man. The practitioner too often does not read much and least of all concerning a specialty. A book on syphilis does very well if 10,000 copies are sold within four years. Probably the most widely circulated publication vehicle in this country, the pamphlet "Venereal Disease Information" issued by the Public Health Service, reaches with its circulation of 7,600 copies most of the physicians in this country who make venereal disease enough of a special interest to keep up to date on it. Yet I feel sure that there is an enormous scattering of patients among another 100,000 of the 150,000 physicians who "take a crack at it" with a few shots of something or other, ignorant alike of methods, possibilities and consequences. To a considerable body of active graduates of twenty or even fifteen years' standing, modern methods mean little. They cannot use the dark-field microscope or think in terms of seronegative primary syphilis or prolonged, intensive, ade-

9. Highman, W. J.: New York State J. Med. **29**:539, 1929.

quately controlled treatment. They are creatures of therapeutic vagary, trying each novelty as it comes. They still give the single dose or one course cure, treat patients for primary syphilis with mercury by mouth and lose or dismiss the patient within six months. Though slowly attenuated in numbers by new blood from below, their static bulk has an enormous intellectual retarding power when combined with the difficulty, awkwardness and practical inconvenience of the thoroughgoing management of syphilis today. It is out of the question to expect too much of the practitioner. One might, perhaps, take a leaf from the commercial notebook and try to approach him via some species of detail man, as was done for a time in Minnesota under Irvine. Or one might induce the agencies responsible for detail men to combine on some sort of constructive educational program in modern syphilotherapy for the practitioner who will listen to no one else and who cannot or will not read a journal. There are possibilities worth developing in cooperation with the pharmaceutic houses.

The person who is *interested,* from the hedgerow pseudospecialist to the member of a national association with some syphilologic leanings, is the hope for an individualistic solution of the problem of the control of syphilis in the United States. He, with the medical student, is still approachable. His numbers can be increased. Through the brushing-up course, he can be drawn to centers and there shown methods and results. But brushing-up courses in venereology are few and far between in the United States. Jadassohn, the dean of European syphilologists and the successor of Neisser, emphasizes this as one of the important elements in the success of the present German movement against the venereal diseases. Working today without a national association of his own, divided between the half-hearted interest of the urologic and the dermatologic camps, and subordinated to the general educative program of the social hygienists, the physician in this country who would do better than the average for the venereal patient is left to the ministrations of the state and national public health services, the officers of which have loyally stood up to the responsibilty as best they could in the face of multiple obligations, cut budgets and unsympathetic and obtuse legislative committees. The Venereal Disease Control Institute held in Washington under national auspices in 1921 by the United States Public Health Service was the first and, unfortunately, almost the last significant and successful effort to give class consciousness, *esprit de corps,* preparation for an adequate technic and pride of accomplishment to the physician interested in venereal disease. Even in this overorganized nation of joiners, it would seem as if the offering of central educational inspiration and recognition like this to those interested in the field of venereal disease might again have

its possibilities. In time this new consciousness might even lead, as it has with the ophthalmologists, the otologists and the surgeons, to some voluntaristic substitute, even if inadequate, for the regulation of medical specialism in the control of venereal disease that marks state-controlled practice abroad.

THE MEDICAL SCHOOL

The medical student, the next great possibility, is sometimes overrated. The movement now on foot at Tufts, for example, to place his teaching in this field under a single department of venereology that will coordinate all aspects of the work, deserves careful study. The required work in syphilis should be merely an exercise in marksmanship and rule of thumb, with routine serologic testing in the foreground and with the fear of God and the spirochete and the need of consultation coloring the background. All else should be elective. Exercise on the mannikin can to some extent be substituted for patients, and this substitution is now being tried. The teaching of dark field technic is probably useless. The medical student who is to help in the fight for the extinction of syphilis must know one practical method for the management of early syphilis. For this purpose existing published systems based on arsphenamine proper are useless, for he will use neoarsphenamine or an intramuscular preparation. The chosen method cannot be presented as the best, but as the most available. System and not variations must be taught. Complications must be described and thoroughly impressed on the student, if they are to be avoided. Individualization must *not* be taught, but rather signs indicating the need for consultation wherever individualization seems necessary. Just as a system for treatment to be used in early cases of syphilis should emphasize and depend on the arsphenamines as a public health as well as therapeutic ideal, so the system for treatment in late cases taught the average medical student must subordinate and defer the use of arsphenamine, since there is no infectiousness to control, in favor of the slower, safer preparatory treatment with bismuth or mercurials.

If, then, from a central group of interested and self-developed specialists one could train officer consultants and generals, and from students, riflemen, a solution of the problem might be in sight. It is my belief that little is to be accomplished by haranguing the faculties or circularizing the deans of medical schools in behalf of more hours of instruction in syphilis for the medical undergraduate. They are not needed, nor is the time for them obtainable. Internal reform of teaching method is needed. There is, too, a simple, direct method of making a minimum of knowledge current, which has been little tried in this country, though responsible, according to able observers, for much

advance abroad. This is the inclusion of questions on treatment for venereal disease in state and national board medical examinations for licensure. The ways and means of achieving this end I am too poor a politician to describe.

ORGANIZATION, CLINIC, INDIVIDUAL PHYSICIAN

With this review of the situation with respect to an individualistic plan for adequate treatment for syphilis, I shall turn now to the various aspects of organization as an instrument of control. Syphilis under the modern régime is, in its early and latent stages, admirably adapted to organizational treatment. The repetition over and over of a technical manipulation, which is carried to a more or less empirically determined limit, with clearly defined means for the avoidance of complications, is *ipso facto* an organizable affair. It is only in the later years of the disease, when impaired structure makes accurate and complete appraisal by examination and experience a positive necessity, and treatment decision and the avoidance of easily induced complications a matter for seasoned judgment, that the individual management by a specialist gains any distinctive advantage over that of an adequate organizational machine. The organization machine, as it was abundantly possible to demonstrate at the Mayo Clinic, can perform acceptably, even in the late case, functions that need a rather high degree of individualization. By the use of technicians under direction, it can surpass the average physician in technic.[10] Organization can surpass the average physician in physical facilities for complete examination and appraisal, though in an individual case it will rarely, except under superhuman inspiration, equal in detailed perfection the decisions of a highly trained expert. For a certain impersonal quality of service and for its shortcomings in judgment it can offer the economic advantages of cost lowered by business methods and "mass production." Through the use of the same economies, it can spend where the physician, unaided, cannot, and can follow the patient, maintain scientific record of him and evaluate from a large series in a short time the worth of procedure which the individual cannot determine from less than a lifetime of work in the field. Even allowing for an indefinable something which reduces the level of performance of the individual as a cog below that of the individual acting on his own initiative and on his undivided responsibility, I am satisfied from my own observation that the reasonable demands of the movement for control of venereal disease with respect to syphilis can be met with sufficient completeness for the ultimate extinction of the disease by organizational treatment both in public and in private practice.

10. Stokes, J. H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1927.

I believe that it may even be said that the private business organization can successfully dominate and meet all the needs for the control of venereal disease.

The type of organization that one might wish to see command the field of venereal disease, if individual initiative fails, is the center or clinic, which may be idealistically defined as an organization devoted under combined medical, academic and business auspices to practice, teaching and research in the field of venereal disease. Too often the clinic is lacking in one or the other, or at times in all three, of the basic elements. It makes much money which it later finds difficulty, because of its initial alienation of medical and academic support, in utilizing for the altruistic and scientific purposes which the founders really had at heart. The clinic pursues research and scholarly ends to the exclusion of practical business policy, as do some of the university centers, and stands forever in tatters with outstretched hand begging support and complaining of the lack of funds for its work. Or it pursues treatment without regard for the stimulating effect of research and teaching ideals or without a fundamental humanitarian outlook. It then becomes the all too common knock-'em-down-and-drag-'em-out night clinic, a shooting gallery or an arsphenamine bar. From the many lessons of each type that American practice has provided, it is to be hoped that Americans will be able at their next large scale attempt to synthesize a venereologic or a syphilologic center which will combine sound technical method through medical cooperation and support, sound finance through business system, an adequate humanity through selection of humane and sympathetic personnel, public health disinterestedness and practical idealism through public health contacts, and teaching and research under auspices of the university medical school. Several of the large cities of this country today combine the resources for a demonstration of this sort which will correct the experimental errors of the past and set an example to the world.

Foremost among the requirements in the organization of centers in the syphilologic field, I should be inclined to place the full-time head and personnel. In a series of personal adventures, ranging from contributions to the organization of three services now nationally known, to the attempt to manage simultaneously two organizations, a clinic and an office, I have come to appreciate as a public health, though not a personal, advantage the undivided interest of the full-time head and staff. I recognize it as almost an impossibility in the expensive demands of an American standard of living, and profess myself content with half-time, provided the half-timer gives three fourths of his time and four fifths of his energy to the work of his heart rather than to the needs of his purse. Of equal importance with full-time are the personal enthusiasm and inspirational power of the chief. Indeed, I would

place this first, I believe, for the venereologic service is a ministry and collapses as a bubble pricked, without the constant dynamic impulse from a lover of his kind. Harrison [11] has reduced to a graph of most interesting proportions the tremendous effect of the chief medical officer on attendance and center performance, and I do not believe that it is possible to overemphasize this. Hence the organization of a center must begin in a search for a leader and a responsive, emotionally adequate personnel. Harrison himself, though his modesty would make him unable to recognize it, is an example in point of the effect of personality on a system of centers. Even more, he is an excellent illustration of the fact that a czar and a benign despotism, instead of the Board of Governors and committee management, are still the most effective and cohesive form of organization of physicians and their aides who must deal collectively with patients.

After the right physician on full-time I would, with Harrison, place adequate physical equipment—the arrangement of quarters such that privacy is conserved while movement of patients and staff is facilitated—and location of the center near its clientele. The importance of these three elements has been graphically demonstrated in British experience and is coming to a better appreciation in American practice, although examples of the opposite are still too numerous to count. The hours of service in a clinic for venereal diseases are vital. The patients are either beginners, who have acquired the disease at an age when time can ill be spared from the job of making one's way, or workers. Here at once, in the effort to develop the ideal center, one comes into conflict with the academician and the student, who teaches and attends classes by day, and the specialist, who enters the field of venereal disease so that he will not have to work at night. The hiring of technicians partially solves the problem, and I have been engaged for two years in experiments looking toward the solution of the teaching and research aspects without having found any completely satisfactory compromise. He who deals with a disease of workers must work when they are free. I have hope, however, that there may still be found medical men who will move the clock around four hours and by a system of shifts combine research, with service in afternoon and night clinics, and a livable life. Perhaps the reorganization of industry on a shorter day and week basis, of which Ford is setting an example, will come half-way to meet the physician of the next generation.

HOSPITALIZATION OF PATIENTS

Many beds are not a necessity for an urban center for syphilis, although to say so reverses my former point of view. In fact, they are too often a nuisance, are held and filled with difficulty, are costly

11. Harrison, L. W.: J. Social Hyg. **15**:193, 1929.

and tend to delay the patient through sometimes specious demands for a time-consuming and lazily carried out "work-up." I was delighted to find Professor Fischl [12] in accord with me on this point, Vienna of all centers being the one most pointed to as exemplifying bed equipment in dealing with syphilis. Undoubtedly there should be some centers with many beds, but they are primarily for the late complications and not for the management of syphilis as a public health problem. I should like to reiterate here, too, what I have often said of the serologic laboratory. Its greatest weakness today is its dissociation from and independence of the clinic for syphilis, which is its only dependable check. Here is one of the weak spots in the present American organization of state aid to the practitioner. One points to 120 or more state and city laboratories doing more than 1,000,000 free Wassermann tests, without enough appreciation of the elements of confusion they can, lacking clinic control, inject into both diagnosis and treatment, especially in late cases of syphilis. Fortunately, in early cases less harm can be done. None the less, this country could well afford to take note of the situation in Great Britain, in which one of the best Wassermann procedures now in use is constantly kept to the highest standard of accuracy by a special laboratory in the St. Thomas clinic, which controls the procedure throughout the network of seventy-nine Wassermann laboratories in the British Isles. Regional and central serologic control has possibilities in this country in spite of its large size and independent traditions.

FINANCE OF CLINICS

Lack of space makes it impossible for me to indulge in a discourse on the finance of clinics, particularly in contrast with the cost problem of private practice, even were I equipped to do so. I can, however, summarize my thesis by saying that as long as there are patients with syphilis to treat, treatment for syphilis can be kept self-supporting, and in a country such as this can earn dividends if such are required for the carrying out of a well rounded program. Great Britain meets the cost of its extensive clinic organization and reaps the results that I have discussed at a charge of only half a cent per person in the population. That not even free arsphenamine is necessary to place the American problem on the road to solution is well evidenced by the effect of business genius in the organization of the Chicago Public Health Institute, the $50,000 capital investment of which has grown into buildings and laboratories, collateral enterprises and research funds aggregating hundreds of thousands of dollars in value on fees such as $1 for a Wassermann test or an injection of neoarsphenamine. Personally, I believe that private enterprise could almost carry indigence

12. Fischl: Personal communication to the author.

and break even or better. Even I, a business tyro, could in my clinic, for $100 a year per patient, give three years of the most modern intensive treatment for syphilis, including forty injections of arsphenamine, fifty intramuscular injections, twenty blood tests, ten or more urinalyses, two examinations of the spinal fluid, and annual physical examinations, have fairly expert management and even pay the patient's carfare besides conducting all the expensive activities of a center. How can the practitioner imagine that he can continue to supply an inferior grade of performance, even garnished with the attractions of personal attention, for from three to twenty times the price and hold his field after his clientele appreciates the situation? Private service for the Wassermann tests alone costs him as much as the entire course of three years in a clinic. Syphilologic practice nowdays is literally capitalizing privacy, instead of performance, and the deception and its remedy ultimately will out, I believe. Once privacy and convenience are supplied, as they easily can be, by an organization, the practitioner in venereal disease work is lost.

A high degree of business acumen is needed in dealing with the collection problem in a paying center for the treatment for syphilis. Here again I have seen fifteen years of experimenting, only to conclude that unless the business element is to usurp more than its share of personnel and emphasis, the granting of credit should be avoided, and the work should be financed on a small fee, pay-as-you-go-and-can basis. To do otherwise places the enterprise under business dominance to the defeat of its other possibilities. I am trying to differentiate between business method and business point of view in the conduct of a center for syphilis. So powerful does the business management of a successful organization of medical men become, and so insidious are the ways in which it can mammonize the work of the heart and the brain, that it is essential that it be kept subordinate. This is one of the reasons why I am losing faith in the separation of the pay and the indigent patient in a compromise solution as between practitioner and clinic. Physicians, perhaps with state subsidy, must organize to take care of the whole field, pay and free, or be displaced. The pay clinic for venereal diseases, in particular, needs to handle constantly some charity or state aid material, in order that its heart may dominate its head and lift its eyes from the coffer and the budget to the level of its public duty. Perhaps, as in continental railroad service, patients will some day see an offered choice of first, second and third class accommodations, with the same basic methods of treatment in all.

MEDICAL FOLLOW-UP

The ability to keep track of the patient and to hold him to treatment is one of the best measures of the way in which either a physician

or a center fulfils its modern obligations. It is a test of successful economic policy, of the educational pressure being brought to bear on the patient and his response to it, of the humanity of the approach, of the technical perfection and reactionless character of the treatment and of the suitability of plant and hours to the work. Few persons can carry on or evaluate follow-up, and as yet few clinics have done so with any completeness. It has too easily become the custom to blame on a shifting and nonhomogeneous population, a low intelligence quotient, a black skin or a noncooperative city health department the wretched proportion of returns which mark American clinic practice. The majority of clinics secure an average return until discharged of 30 per cent, and from 60 to 75 per cent is the claim of only the best clinics of the country. In the clinic at Pennsylvania, Pugh [13] found that of 440 reasons given by 321 patients for nonreturn, financial problems and insufficient contact between staff and patient account for nearly half of the derelictions. Perhaps it is through better holding power by closer contact that the individual physician may yet keep his own, though from my own efforts in private practice, I doubt it. Analyzed from various angles, these figures tend to show that failure to impress the patient with the medical facts; reactions to treatment especially intramuscular injections, which interfere with work; the hours of the clinic, which conflict with those of the patient's occupation; together with illness and permanent change of domicile are, in the order named, the chief reasons for failure to complete treatment. This is an interesting confirmation of Colonel Harrison's belief that the universalization of a reaction-producing item in technic, such as lumbar puncture, would wreck his public health aim. The figures are leading us to modify substantially some phases of our schemes for intramuscular treatment. Two other interesting items stand out from the survey, well worth the attention of the compulsionists among health officers, of whom I must admit I have long been one. In a city clinic, compulsion and threats seem practically worthless, and the form letter is ineffective as compared with the personal visit. The two latter observations, if confirmed by larger scale studies, will compel a complete reversal of an important part of militant public health policy with respect to venereal disease. One is too easily impressed by an occasional support of quarantine by the courts. We in this country have taken a little too readily to the police attitude. With our fluid population, we shall yet have, I believe, to trim our practice to the principles of Great Britain, to abandon or at least rarely to enforce notification and quarantine or any policy other than one of education and to make treatment cheap or free, safe, accessible, attractive and comfortable.

13. Pugh: Unpublished data.

None the less, it cannot be denied that a strong group both here and abroad feels the need for the compulsory element in the treatment of the irresponsible.

ADVERTISING

Backed by the published utterances of the head of the British system, the precedents of the Scandinavians and the startling demonstration at the Brooklyn Hospital some years ago by one who is now the secretary of a large, progressive and orthodox public health committee of a county medical society, perhaps a mere clinician may say without risk of censure that properly controlled advertising will be a necessary element in the conquest of venereal disease in this country. It must, I believe, be more than the dignified card, tract or even Christmas seal (picture one with silver spirochetes rampant over crossed syringes on a field d'or). Perhaps advertising will come out in the papers, with full page paid accounts of the facts of the disease, the whereabouts of agencies for treatment, their hours and even their staffs. The kiosks and the billboards may contain announcements. Here indeed is an experimental field for wealth. When it comes, advertising will, let us hope, be controlled by organized medicine and the state, lest it spell the exit even of the bona fide specialist from the field everywhere. Again let us hope that the next attempt at solution will soon be made by a combination of medical society, university medical center and the public health officers of some one of the great cities of the United States.

I have now treated, somewhat exhaustively I am afraid, the two great elements in the national resource against venereal disease. I suspect that I shall be accused of treating them unequally, although I have made an effort rather to portray them objectively, each with its best possibilities to the fore. I am not unaware of the weaknesses of organization in medical practice, particularly when it becomes infected with the principles of big business. No one appreciates better than I do, who has a foot in each stirrup now, and who has ridden first one horse and then the other, how grave are the defects of impersonalization, of division of responsibility, of distance between top and bottom, of suppression of individuality and talent, of mediocre performance, of indifference and callousness and of disappearance of all the finer values of individualized medicine which may mark the entry of organization into the field. I cannot say in which direction the supremacy should go. Perhaps in some fusion program the inestimable worth of the individual physician will be conserved. For such a fusion, I personally doubt if the degree of cooperation existing today, such as it is, between the public health services, state and national, their clinics and laboratories, the universities and medical schools, the hospitals and the private practitioner is an adequate or even a particularly promising substitute.

RESEARCH PROBLEMS

Turn now to research and consider for a few moments the points at which it can immediately assist progress in the syphilologic field. It should be understood that I do not minimize the importance of steady, persistent work on the long range fundamentals. The first weak spot in the present equipment that research can overcome is the substitution of specific differential staining, or some device such as the serologic testing of the chancre serum, for the cumbersome and impracticable dark-field examination. While the apparatus has undoubtedly been simplified by the development of the cardioid condenser, the inertia of the practitioner who does not have one and the serious margin of error introduced by inexperience in identifying *Spirochaeta pallida* are not so easily disposed of. From experience I should estimate two weeks with fairly abundant material as the minimum of time to be given to intensive study of dark-field technic for the achievement of enough proficiency and confidence with the instrument to make the medical student wish to own one and to make him really fit to use it. The dark-field microscope is not important enough for general work to make its use standard, like a blood counter. I know of no course in syphilis that can give the needed training, and I am sure that less than 5 per cent of the students who have heard my most strenuous adjurations own a dark-field microscope. Offsetting the use of centralized facilities, Dixon has, I believe, questioned the worth of the commercial laboratory's report on dark-field examination, and I have myself seen evidence that even in clinics where the work is routine, serious mistakes are made. After five years of painstaking study and experiment, Kast and Kolmer [14] have come to the conclusion that *Spirochaeta pallida* has never been directly cultivated from the human chancre, unless by Noguchi and by Schereschewsky, a conclusion that is a reflection on the accuracy of criteria for the identification of genital spirochetes which should give us pause. Unless a specific stain that identifies by microchemical action, and not by form, can be developed, it would almost seem as if the more practical prospect lies in the direction of the local serum reaction, positive in advance of serologic tests on the blood. For such an accomplishment there is a foundation in the work of Kolmer and Klauder [15] on the local Wassermann test, that of Elliott [16]

14. Kast, C. C., and Kolmer, J. A.: Am. J. Syph. **13**:417, 1929.

15. Kolmer, J. A., and Klauder, J. V.: The Wassermann Test Performed with Chancre Fluid as an Aid to Early Diagnosis of Syphilis, Arch. Dermat. & Syph. **5**:566 (May) 1922.

16. Elliott, J. A., and Todd, L. C.: The Value of the Kahn Precipitation Test in the Diagnosis of Primary Syphilis and Its Adaptation to Local Fluids, Arch. Dermat. & Syph. **9**:208 (Feb.) 1924.

on the micro-Kahn test, and perhaps in some adaptation of Kline's [17] ingenious slide precipitation tests. In any event, there is great need for something as easily performed, with as little special equipment, as is a stain for gonococci or tubercle bacilli, to make actual the potential benefits of seronegative diagnosis of primary syphilis.

CURABILITY OF SYPHILIS

The next group of researches with an eminently practical bearing concerns the fact of cure. Only last August the foremost American authority, Warthin,[18] stated before the British Medical Association that he had never seen a case of "cured" syphilis, even after modern treatment, in which he could not find evidence of the survival of the process and even the organism itself at autopsy. Although Warthin conceded that he had not had the opportunity to study the results of an intensive five year system of treatment in any case, the reflection gives clinicians little comfort, for five months is nearer the grand average of duration of treatment today, and few patients can ever be expected to endure the rigors of a five year system. The utilization of a flair such as Warthin's for the identification of the spirochete in tissue is the chief available means for an early measurement of the effects of modern procedure, short of clinical study of the fifty year period of spontaneous evolution of the disease in subjects treated in the arsphenamine era. By a cooperative arrangement between clinicians and individual practitioners over the country, as with Mall in the collection of human embryos, a supply of autopsy material from patients treated for syphilis and dying of other causes could be gathered, examined in Warthin's laboratory coincidently with animal inoculation studies, and on the basis of the observations, priceless information as to the worth of modern procedure should be forthcoming. It is Warthin's belief that treatment simply reduces the disease to premature latency, and that even now, as under the older mercurial regimen, the subject then maintains that latency at the price of his tissue reserve. Again, however, I am obliged to point out that the latency, if it is noninfectious, is the important public health fact, rather than the persistence and the tax on the individual.

Few clinical aspects of syphilis are more in need of clarification than latency. The life cycle of *Spirochaeta pallida,* so intimately bound up with the question of the survival of the infection in lymph nodes, is again under investigation (Levaditi and his associates [19]). On the

17. Kline, B. S., and Young, A. M.: J. Lab. & Clin. Med. **12**:477, 1927; Am. J. Syph. **11**:290, 1927. Miller: Am. J. Syph. **13**:583, 1929.

18. Warthin: Brit. M. J. **2**:236 (Aug. 10) 1929.

19. Levaditi, C.; Schoen, R., and Sanchis-Bayarri, V.: Bull. Acad. de méd., Paris **98**:149, 1927; Ann. de l'Inst. Pasteur **47**:475, 1928.

transplantation of lymph nodes hangs the controversy between the Kolle and the Chesney group,[20] so to speak, and with it all the present interpretations of immunity phenomena based on the sterilization of the rabbit by treatment, and its reinfection and superinfection. Latency and the life cycle of the organism are involved in the seminal transmission of syphilis, which students of familial syphilis, such as Cooke and Jeans,[21] rated as one of the principal means for the transmission of the disease in marriage, and which has hardly been studied since Eberson.[22] The question as to whether there is not possible an asymptomatic onset of syphilis for man such as has been demonstrated by Brown and Pearce [23] for the rabbit, to be continued as a carrier phase (Kolle [24]) in which the patient simply harbors spirochetes without reacting to them, as does the mouse in the experiments of Jahnel and Prigge,[25] is vital not only to the whole conception of the carrier, but to the prophylaxis of the disease. Whether the patient with latent syphilis leaks spirochetes at all, or periodically, and whether he really needs the vast amounts of treatment expended on him today on the strength of his positive Wassermann reaction are problems of the most practical bearing in a public health campaign dependent, as ours is, on the presumed reduction of the individual to noninfectiousness.

PREVENTION FOLLOWING EXPOSURE

The field of prophylaxis bristles with questions that need immediate study. Here lies a whole territory richer in possibilities for prevention than the entire therapeutic field of syphilology at the opening of the century, practically untouched today, in part at least because of moral prudery. Is it treatment of the infected patient, or is it the condome and the girl friend's insistence on it that are reducing the incidence of venereal disease of the world? Is there not conceivable a pastil or a bougie, as Dickinson suggested,[26] that will be simultaneously an adequate spirocheticide, gonococcide and contraceptive? Is it not high time to make a genuine investigation of the bootleg prophylactic packet traffic and the dangerous and nonprotective devices sold at

20. For a review see Harrison, L. W.: Brit. J. Ven. Dis. **5**:173 (July) 1929.

21. Cooke, J. V., and Jeans, P. C.: Am. J. Syph. **6**:569, 1922.

22. Eberson, F., and Engman, M. O.: An Experimental Study of the Latent Syphilitic as a Carrier, J. A. M. A. **76**:160 (Jan. 15) 1921.

23. Brown, Wade H., and Pearce, L.: The Experimental Production of Clinical Types of Syphilis in the Rabbit, Arch. Dermat. & Syph. **3**:254 (March) 1921.

24. Kolle, W.: Centralbl. f. Bakteriol. **106**:134, 1928.

25. Jahnel, F., and Prigge, R.: Deutsche med. Wchnschr. **55**:694, 1929.

26. Dickinson: Personal communication to the author.

hold-up prices on which reliance is constantly being placed with disastrous results? The research campaign lacks realism if it refuses to attack these questions and waits for the determination of the chemical structure of *Spirochaeta pallida*.

ESSENTIAL CLINICAL RESEARCH

It was a matter of some interest to me, a clinician, as chairman of the Committee on Research in Syphilis, to note the refusal of the executive group of that organization to support the recommendations of the scientific committee for a clinical investigative program, for which funds had subsequently to be found from another source. Perhaps the experience gained from the tuberculosis campaign with the clinician influenced the decision not to invest limited funds in anything supposedly so intangible as clinical experience. But with all its defects, the clinical method of delineating the disease and describing its biology in man has at the present time no substitutes in syphilology, and deserves better research support if one is not to remain in ignorance of many vital questions. Merely to suggest an example or two: how, other than by clinical investigation, is one to recognize the onset of cardiovascular disease, the early phase of which is at once the nemesis of the supposedly cured patient and the *terra incognita* of the physician, if one does not study the incidence of aortic signs five or more years after infection in patients treated by modern methods? How, too, is one to evaluate the attempts at simplification of diagnostic procedure, especially in the field of the precipitation tests, which are constantly being offered by the laboratory, if not through the clinical study of the case? How, unless by studying simplification of treatment on the patient, is one to conserve the American ideal of treatment by the practitioner? Clinical investigation deserves development, and the clinic as a cooperator in research on more purely laboratory lines should also be appreciated and its effectiveness increased, especially in the direction of more thorough medical examination and more systematic and effective follow-up.

I must leave the topic of research with the entrancing speculative possibilities of chemotherapy untouched, to say in conclusion a word or two about my impressions of research organization. From one who has, perhaps, given an impression of undue emphasis on the possibilities of organization in dealing with the patient as a public health problem, some degree of recantation in favor of the individualistic approach to fundamental research may be forgiven. Syphilologic research in the experimental field is well known to be of slow growth and expensively nurtured. One of its first steps, as Wade Brown pointed out, to develop a rabbit hospital and watch the course of the

disease over a period of years until it is known in the rabbit, has been begun only two or three times in the history of syphilology in this country, and it is still a far cry from the rabbit to man. For the maintenance of program and tradition over the long periods in which investigative results are maturing, it seems as if foundations, institutes, were a necessity. Yet the Research Committee, confronted with this question, was obliged to accept the alternative of financing individual scattered studies, for lack of funds to support what would be a costly, though valuable, plan under American conditions. American research in syphilis, aside from economic factors, suffers from a tremendous disadvantage, on which Brown has laid insistent emphasis. There is no syphilologic tradition nor are there groups or schools of investigators in the United States that can compare, for example, with the Pasteur Institute under the successive leaderships of Metchnikoff and Levaditi, the clinic at Breslau under Neisser with Jadassohn as his successor or the Speyer-Haus at Frankfurt, which perpetuates the memory of Ehrlich. American research in syphilis has been a creature of opportunity, a casual entrant here and there, attracting the interest of an individual or a changing group for a few months or years, but rarely of one group for even as long as five years, to say nothing of two generations. Accordingly, when one comes to survey the resources in investigators for an American program, one finds, after receiving the courteous refusals of those under whom the work should go forward, that there is little left to do but to build from the bottom or to accept a patchwork substitute. A syphilologic program might well, after a survey of the American field, take refuge in internationalism and try to spend its money to better advantage abroad, if it felt obliged to secure quick fundamental results for a minimum expense. The Research Committee, then, so far as its American program is concerned, has perforce concentrated on as many fundamental projects as it could induce investigators to undertake rather than on the development of an American tradition with a long range future in two or three institutions or groups.

In underwriting individual investigators, I think that it is more important to conserve them as men, surround them with pupils and permit them to develop a technic than to demand too precise an accounting of them on individual problems. What might it not mean for the future of scientific syphilology if a Warthin, a Voegtlin and a Wade Brown could each father a group and be immortalized in distinguished discipleship? As it stands, Brown is the only one whose line will be perpetuated, so far as is now apparent, in the person of Chesney.

Perhaps I overemphasize the value of an investigative tradition here. It may be that the future is with the free lance, and the function of the research promoter is to ferret him out and help him to self-

development. This is, however, a haphazard method, with a large margin of trial and error and a high cost. It may be that the formulation of a program and the subsidizing or farming out of its component parts to tried men are the clue to the situation. But of research in general I cannot forget the words of Krogh [27] before the first session of the recent Physiological Congress, in which he said farewell to the dream of an organized, assigned and pigeon-holed research system, machined to ultimate perfection by supposedly master minds, dominating their Robots and coordinating their cohorts. I doubt me if he is not right in saying that research is the guerilla warfare of man with the Unknown. My observation, such as it is, and I have tried to organize research for fifteen years in the syphilologic field, is that no scheme will work which too sharply limits the individual worker's unaccountability of inspiration, his autonomy of procedure, his mode of expression or his right to personal recognition for the product of his genius. He can be neither efficiencized nor milled, made a mouthpiece nor submerged in identity. I suspect that the same principle will be found to apply somewhat to group effort as between clinics or between departments in the same organization. Is it not wiser and more conservative of the individual enthusiasm and "élan" on which valid research, with the heart in it, must rest, to pool material and then admit to expression of its research results only those persons as spokesmen whose words and conclusions can be sponsored wholeheartedly and without monitorship by the group? Perhaps the publication of a majority and minority report, as in the jury system, meets the need for variance in interpretation. Certainly either of these plans conserves the spirit and the yearning of the individual worker to investigate as no composite, jargon-speaking fusion image of group participants ever can. I believe, therefore, more in the federalization than in the centralization of research. Therein lies, to my mind, part of the secret of the enormous and effective productivity of the European clinic. The thin driblets of progress, overshadowed by multiple names beneath the title line, are evidence of overorganized research. The name of the European investigator more often stands out alone. In a footnote, the sponsorship of his chief and his group is simply and inconspicuously granted or acknowledged.

BIGGS AND SOCIAL HYGIENE

I feel that no expression worthy of the name of memorial to Hermann Biggs should close without reference to the place of social hygiene in the program for control of venereal disease. Too often practitioners of medicine and public health officers, imbued with a

27. Krogh, A.: Science **70**:200, 1929.

fervor for disease extermination as such, forget, as Hermann Biggs did not, that no program is complete which neglects the ethical and social values involved in dealing with a sexually transmitted infection. The health officer has the advantage of the hygienist in the definiteness of his appeal to public support, the clearcut and statistically demonstrable nature of his results and the simplicity and directness of his aim. Too often he underrates the hygienist, judging his aims as unimportant. The conservation of moral values by a measure, the need for delay while an educational approach is brought to bear, seems to both practitioner and health officer to be little less reprehensible than trafficking with the enemy. The social hygienist seems to them to have his head in the air, busied with puttering items of uplift, unaware that his feet are in the mud. He seems too slow to grasp the paramount value of medical measures as the health officer sees them. He cherishes illusions, he is visionary, goody-goody, a reformer in the undesired, preachy sense, a man of words but no deeds, a bit womanish and ignorant of the facts. On the opposite side, the social hygienist is sometimes rightly inclined to deprecate in the sanitarian on sex matters a coarseness of point of view, a urologic propensity for stories, a cynical acceptance of laxity provided its consequences can receive enough arsphenamine to render them noninfectious. It is a tragic thing that men like Biggs could not have lived through two generations instead of one, that their influence in bringing together the public health and the social hygiene points of view might have been the more continuously and the longer felt. There can be no escaping the fact that the broad educational program of the social hygienist, the gradual bending of tribal mores, laws, concepts and ethical standards to a better fulfilment of man's sexual destiny is a vital part of a well rounded and humane plan. There is no antagonism between the programs. Speaking as a health officer and a practicing physician, I can say that I would perhaps wish of the social hygienist at times a little more science and a little less cocksureness in the proposal of right and the opposition of wrong. Just as certain points have been indicated as especially needing investigation in the medical field, so I might presume to suggest that more progress is needed in certain aspects of the field of social hygiene. The scientific attack on sex behavior as illustrated by the studies of Hamilton,[28] Katherine B. Davis [29] and John Watson, are illustrations of an as yet too infrequent application of scientific method which can be carried to every aspect of the human sex problem. Nothing will so serve

28. Hamilton, G. V.: A Research in Marriage, New York, Albert & Charles Boni, 1929.

29. Davis, K. B.: Factors in the Sex Life of Twenty-Two Hundred Women, New York, Harper & Brothers, 1929.

to dispel the nebulous quality and the sense of preconception and closed-mindedness that hangs about social hygiene today as these frank efforts to get through taboo and herd inhibition to the facts. No approach will more promptly, I hope, inspire the health officer to the necessity for a social hygiene point of view. The study of marriage appeals to me particularly, because I see so many of the disastrous results of current ignorance of its technic and mistaken notions of its purpose. I feel it to be almost a matter of desperate emergency, rather than one for leisurely advance, that education for marriage, down to the finest detail of words and acts, be made a systematic part of the equipment of youth for life. How inexpressibly much of the trouble that besets the relation arises from the misconception of it as a device for the production of happiness, instead of a variety of human, I might almost say educational and religious experience. Sometimes vaguely, but nearly always poignantly, we venereologists feel that there is something away in the direction of social hygiene that we need, but it has not yet commended itself to us largely, wholeheartedly, sincerely. May it be yours, social hygienists, to bring it to us, reinforcing with spiritual value the temporal power of our arms. If indeed the influence of Hermann Biggs, the farseeing, is with us tonight, as those who have known loss must believe that it is, let us ask in his name that we, the practical sanitarians and you, the social idealists, as brothers, be joined.

FUNGISTASIS IN RINGWORM OF THE TOES AND OF THE FEET

I. SALICYLIC AND BENZOIC ACIDS *

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Undoubtedly the most common sites of dermatophytosis in adolescents and adults are the feet and the toes, where the lesions appear on the plantar and dorsal surfaces, interdigitally and in the nail substance. At least three types of lesions have been recognized in these localities: the dry, scaly, eczematoid type, which in acute exacerbations becomes moist and erythematous (possibly because of secondary bacterial invasion); the sodden macerated "soft-corn" type with cracking of the skin, and the acute vesicular type with hyperkeratosis. Hulsey and Jordan [1] found a clinical incidence for ringworm of the toes of 67 per cent and a microscopic incidence of 49 per cent in a group of 100 students. Weidman [2] stated ". . . there is always an abundance of toe ringworm material available. . . ." Sharp and Taylor [3] indicated the prevalence of interdigital ringworm in the South, Canada and Texas and at the University of Chicago.

It is believed by many, notably by Weidman, Cleveland White,[4] and Williams,[5] that the interdigital spaces and the toe-nails act as reservoirs of infection from which the organism may spread by continuity, lymph or blood; or from which the organism may be transferred by the bath towel or the fingernails to the groin or to other regions of the body. In

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1. Hulsey and Jordan: Ringworm of the Toes as Found in University Students, Am. J. M. Sc. **169**:267 (Feb.) 1925.

2. Weidman, Fred D.: Dermatophytosis: The Newer Ringworm, J. A. M. A. **90**:499 (Feb. 18) 1928.

3. Sharp and Taylor: Interdigital Ringworm Control Among Students, J. Prev. Med. **2**:485 (Nov.) 1928.

4. White, Cleveland: Mycotic Inguinal Lymphadenitis Associated with Superficial Fungus Dermatitis of the Feet, Arch. Dermat. & Syph. **18**:271 (Aug.) 1928.

5. Williams, C. M., and Barthel, E. A.: Tinea of the Toe-Nails as a Source of Reinfection in Tinea of the Feet, J. A. M. A. **93**:907 (Sept. 21) 1929.

these ways there arise from time to time cases of secondary dermatophytosis or dermatophytid.

The three commonest pathogenic fungi imperfecti to be found on the toes and feet of patients in the United States are *Trichophyton interdigitale, purpureum* and *gypseum*. It is to this triumvirate that attention should be mainly directed if the public health problem of dermatophytosis is to be controlled or eradicated. Any therapeutic measure which will easily cure or prevent the spread of these trichophytons will be of great benefit to the infected and be of equal interest to the dermatologist. Such a utopian agent is as yet unknown.

The most commonly employed medication in ringworm of the toes and of the feet is probably a combination of salicylic acid and benzoic acid such as is exemplified in the familiar Whitfield's ointment. The beneficial effects of this combination usually show themselves clinically rather quickly, and although reinfections or recurrences (there seems to be a difference of opinion as to which is the case) appear so frequently as to be discouraging, one must admit that these acids have a fungistatic if not a fungicidal activity.

The authors have conducted a study of the fungistatic action of these combined acids on several common trichophytoses of the feet and toes and propose to carry on similar studies and fungicidal studies with other therapeutic agents.

PREPARATION OF THE FUNGISTATIC MEDIUM

The medium used throughout this study was the "Pennsylvania" medium, consisting of the proper amounts of agar agar, American crude dextrose, Chaissaing peptone and distilled water. After sterilization of this medium, it was cooled to 40 C., the proper amounts of the acids in crystalline form were added, the mixture was stirred, and under aseptic precautions sterile tubes were filled and slanted and their sterile nonabsorbent plugs inserted. The plantings were made after solidification of the medium had occurred. The control tubes contained the "Pennsylvania" medium without the added acids. The plantings of the control tubes were from the same subcultures as were used in the planting of the fungistatic tubes. The combinations of concentrations of acids used in the tubes were arbitrarily chosen, except in about one half of the tubes in which the 2:1 ratio of the acids was used as in Whitfield's ointment. The tubes were incubated at room temperature for six weeks. At the end of that period, the results of growth were tabulated (table 1). Thirteen dilutions, ranging from 1:60 salicylic and 1:30 benzoic acid to 1:10,000 salicylic and 1:5,000 benzoic acid, are not included in the table as in all of these dilutions no growth was obtained.

We recognize that much greater concentrations of benzoic and salicylic acids are employed in clinical dermatology (even 5 to 10 per cent ointment) than were used in this laboratory study, but criticism of our study should not be raised on this basis. Application of a strong concentration of these acids to the surface of the skin is no assurance

that the drugs penetrate in any definite concentration to any notable distance below the surface, and it may well be that the concentration at the level of the fungus only amounts to the 1:10,000, 1:15,000 or 1:30,000 employed in our experiments.

It will be noted that subcultures 1850 and 1869 (both *T. interdigitale*) were restrained from growth less easily than was subculture 1043 (also *T. interdigitale*). This may be explainable as due to a difference in strains of *T. interdigitale*. Subcultures 1043, 1611 (*Trichophyton pedis*), and 1851 and 1550 (both *T. purpureum*) were restrained in general by a strength of about 1:30,000 salicylic acid and 1:22,500

TABLE 1.—*Fungistatic Results of Combinations of Salicylic and Benzoic Acids on Three Common Trichophytons of the Toes and the Foot* *

Subculture †	1043	1611	1850	1869	1851	1550
1: 6,000 salicylic } 1: 3,000 benzoic }	0	0	0	0	0	0
1:10,000 salicylic } 1: 5,000 benzoic }	0	0	0	0	0	0
1:15,000 salicylic } 1: 7,500 benzoic }	0	0	+	±	0	0
1:15,000 salicylic } 1:10,000 benzoic }	0	0	+	+	0	0
1:15,000 salicylic } 1:15,000 benzoic }	0	0	+	+	0	0
1:30,000 salicylic } 1:15,000 benzoic }	±	0	+	+	0	0
1:30,000 salicylic } 1:20,000 benzoic }	+	+	+	+	+	0
1:30,000 salicylic } 1:30,000 benzoic }	+	+	+	+	+	+

* Dr. Fred D. Weidman and Miss D. Spring of the Laboratory of Dermatological Research, University of Pennsylvania, furnished the original cultures from which subcultures were made. 0 indicates no growth; +, growth; ±, that in some tubes of this strength growth occurred and that in others of the same strength it did not.

† Subculture 1043 was Tr. interdigitale, isolated from a human source about September 1927; subculture 1611, Tr. pedis, isolated from a human source on Dec. 28, 1926; subculture 1850, Tr. interdigitale, isolated from a human source on May 17, 1928; subculture 1869, Tr. interdigitale, isolated from a human source on July 23, 1928; subculture 1851, Tr. purpureum, isolated from a human source on May 14, 1928, and, subculture 1550, Tr. purpureum, isolated from a human source on Oct. 19 1926. Growth was obtained in all control tubes.

benzoic acid combined. Schamberg and Kolmer,[6] working with these acids, which were separated and not in combination, and with a different series of fungi than the foregoing trichophytons, found restraint of growth to require much higher strengths of the two acids than in our studies, and stated the following generalization: "One is somewhat astonished at the relatively poor showing in inhibiting the growth of molds exhibited by salicylic and benzoid acid." This generalization apparently does not hold for the three trichophytons which are the basis of our study, as the two acids in combination show fungistatic power even in dilute solution.

6. Schamberg, J. F., and Kolmer, J. A.: Studies in the Chemotherapy of Fungus Infections, Arch. Dermat. & Syph. **6**:746 (Dec.) 1922.

FUNGISTASIS IN VITRO VERSUS FUNGISTASIS IN VIVO

This phase of the problem was undertaken in view of the following admonition of Weidman:[7]

> It becomes necessary to inquire at this point whether the resistance of fungus species against heat, dyes, etc., is the same when they are freshly taken from tissue (pus, hair) as when they have been grown in the test tube for several generations. If it should develop that they are radically different, it would vitiate some of the fungistatic work in its application to therapy. This threat, however, awaits actual test of the two stages of fungus micro-organisms.

Fungistatic tests similar to those just described were made of the same or comparable organisms more recently isolated than the subcul-

TABLE 2.—*Fungistatic Effects of Salicylic and Benzoic Acids on Quasi-in Vivo Trichophytons of the Same Types as in Table 1* *

Subculture †	New 1043	18	4 A (feet)	44 (nails)	New 1550
1:10,000 salicylic } 1: 5,000 benzoic }	0	0	0	0	0
1:15,000 salicylic } 1: 7,500 benzoic }	0	0	0	+	0
1:15,000 salicylic } 1:10,000 benzoic }	0	+	0	+	+
1:15,000 salicylic } 1:15,000 benzoic }	0	+	0	+	+
1:30,000 salicylic } 1:15,000 benzoic }	0	+	+	+	+
1:30,000 salicylic } 1:20,000 benzoic }	0	+	+	+	+
1:30,000 salicylic } 1:30,000 benzoic }	+	+	+	+	+

* Dr. Fred D. Weidman and Miss D. Spring furnished the new freshly isolated subcultures 1043 and 1550. The other three subcultures were isolated by the authors from the feet of Cornell University students. 0 indicates no growth, and +, the presence of growth. Growth was obtained in all control tubes.

† New subculture 1043 was T. interdigitale, isolated from a human source on Oct. 14, 1929; subculture 18, T. pedis, isolated from human source on Jan. 18, 1929; subculture 4 A (feet), T. interdigitale isolated from human source on Jan. 9, 1929; subculture 44 (nails), T. purpureum, isolated from human source on April 27, 1929, and new subculture 1550, T. purpureum, isolated from human source on Feb. 5, 1929.

tures used for the studies arranged as table 1. The results of these "quasi-in vivo" studies are arranged as table 2.

The fungistasis of the new subculture 1043 of table 2 may be directly compared with subculture 1043 of table 1, as they are identical organisms isolated from the same person at an interval of about two years. There is little difference in the strength of the acids necessary to restrain growth of the in vitro strain (1043) and the in vivo strain (new 1043).

Comparing new subculture 1550 with subculture 1550, we find a different state of affairs. The in vitro strain (1550) is restrained by very slight amounts of the acids, i. e., about a 1:30,000 concentration of

7. Weidman, Fred D.: Light from the Botanic Field on Medical Mycologic Problems, Arch. Dermat. & Syph. **19**:867 (June) 1929.

each, whereas the in vivo strain (new 1550) is only restrained in growth by a stronger combination of about 1 : 15,000 salicylic acid and 1 : 7,500 benzoid acid, which is about double the amount of acids necessary to restrain growth in the organism more accustomed to laboratory existence.

Direct comparison of subcultures 18 and 1611, although both are *T. purpureum,* may not be justified, since they have been obtained from different persons and hence may possibly be radically different strains of the same organism. If, however, such a comparison be permitted, the observations are about as in the case of the two cultures of 1550 (*T. purpureum*).

We have considered subculture 4A (feet) to be identical with type 1043 of *T. interdigitale* rather than the type 1850 or 1869. Its restraint of growth (table 2) compares favorably with that of subculture 1043 (table 1).

The restraint of growth in vivo subculture 44 (nails) (*T. purpureum*) in comparison with that of subculture 1851, if permitted, is almost identical with the comparison of new subculture 1550 with subculture 1550; they behave consistently.

It seems reasonable and justifiable to state, as a result of comparisons between tables 1 and 2, that there is some slight evidence that during a period of laboratory existence certain trichophytons show a decreased resistance to the fungistatic action of salicylic and benzoic acids.

THE FUNGISTATIC ACTION OF SALICYLIC AND BENZOIC ACIDS

Do these acids restrain fungus growth by virtue of increasing the hydrogen-ion concentration of the medium to such a point that growth cannot occur? The answer offhand might be "yes" from one who did not check up carefully on the chemistry. Thus, salicylic and benzoic acids are weak acids, and the quantities just necessary to produce fungistasis are inconsequential as far as increased acidity is concerned. Furthermore, undoubtedly the peptone in the medium acts to a certain extent as a "buffer." The p_H of the "Pennsylvania" medium, without added salicylic and benzoic acids, is 4.75 by the electrolytic method. The addition of 1 mg. of salicylic acid and 1.5 mg. of benzoic acid to 30 Gm. of the medium results in a medium containing 1 : 30,000 salicylic acid and 1 : 20,000 benzoic acid (about the limit of fungistatic action) and having a p_H of 4.70 by the electrolytic method. This slight change in hydrogen-ion concentration is evidently not the factor producing fungistasis in this study.

Does the fungistasis occur by virtue of the negatively charged ions? Both of the acids are only slightly soluble in water (salicylic acid 1 : 308, benzoic acid 1 : 28, Sollmann). Nevertheless in the extreme dilutions

used in this study of fungistasis, complete solution has occurred, naturally accompanied by dissociation of the acids into positive and negative ions and according to the well known reversible equations of dissociation familiar to students of physical chemistry. We have already noted that the positive ion (H) is not a factor in producing fungistasis. Turning to the negative ion next, salicylic acid is a direct derivative of sodium carbolate and hence indirectly a phenol (hydroxybenzene) derivative. Its negative ion is therefore a carbolate ion. The antiseptic (growth restraint) action of salicylic acid as an internal medicament in the form of its sodium salt and as a food preservative is undoubtedly due to its affinities with phenol, a substance which is used as a standard in determining the antiseptic and disinfectant coefficients of many chemical compounds (phenol coefficient). The presence of the (OH) and (COOH) groups in the orthoposition of the benzol ring, as in salicylic acid $C_6H_4 = < \frac{OH}{COOH}$ gives valuable antiseptic qualities.[8]

Benzoic acid is also an indirect derivative of the benzol ring and has the chemical formula C_6H_5COOH. The introduction of the (COOH) group alone into the benzol ring, without any hydroxyl (OH) group, does not bestow any great antiseptic action on benzoic acid; it is almost free from antiseptic action (Sollmann[8]). All things considered, the negative ion is of more importance as a fungistat than the positive ion, for both salicylic and benzoic acids.

Does the fungistatic action of the combined acids depend on their keratolytic, corrosive and caustic action on protoplasm? The well known coagulant and caustic action of salicylic acid on protein is too familiar to require further description. Undoubtedly the caustic coagulant action of phenol, cresol and salicylic acid is largely due to the (OH) group of the molecule, since substitution of other groups for the (OH) group of these compounds destroys their power of caustic action. Benzoic acid, devoid of any (OH) group, does not possess the caustic, keratolytic action of salicylic acid to so marked a degree. Coagulation of the hyphae and reproductive elements of the fungi, with consequent destruction of their protoplasm, is conceivably a large factor in the fungistatic action observed in this study. One might imagine that these acids enter into chemical combination with the sodium proteinate type of bases included in the cells of the skin of man and in the protoplasm of the fungus. Sollmann stated, however, that there is no such chemical combination, and that the coagulation is due to a molecular phenomenon. Incidentally, the larger the molecule in this antiseptic coal-tar group, the greater apparently will be the antiseptic action.

8. Sollmann: Textbook of Pharmacology, Philadelphia, W. B. Saunders Company, 1906, p. 375.

CONCLUSIONS

1. Combined salicylic and benzoic acids are strongly fungistatic for three of the common trichophytons of ringworm of the feet and the toes.

2. Fungistatic tests indicate that the cultures of *T. interdigitale* used in this study belong to two different strains in respect to their powers of resistance to salicylic and benzoic acids.

3. There is some evidence that the trichophyton species of this study are less resistant to the fungistatic action of salicylic and benzoic acids in vitro than "in vivo."

4. Salicylic and benzoic acids do not restrain the growth of fungi by an increase of the hydrogen-ion concentration.

Using this study and the deductions of Sollmann as a basis, we can add the following conclusions to those already mentioned:

5. The negative ion (derivative of the benzol ring) is the one of importance in bestowing fungistatic properties on salicylic acid.

6. The (OH) group of the molecule of salicylic acid gives it valuable caustic and coagulant properties for the protoplasm of fungi; these properties are less evident in the action of benzoic acid (devoid of (OH) group).

7. The fungistatic properties of these acids are a function of the large size of their molecules.

ASSOCIATION OF CLINICAL NEUROSYPHILIS WITH VARIOUS TYPES OF TERTIARY SYPHILIS*

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The study of the localization of syphilitic lesions has always been important, not only because of the interest in the natural history of the disease, but because of the bearing it may have on therapy. Recently, interest has been revived in the time-worn observation of the infrequency of a history of antecedent syphilitic skin lesions in patients suffering from neurosyphilis. Moore,[1] from this clinic, in a series of papers reporting the results of clinical studies in asymptomatic neurosyphilis, analyzed in detail the association of asymptomatic neurosyphilis with other manifestations of syphilis. A search through the literature did not reveal any accurate studies of the types of associated complicating tertiary syphilitic lesions in manifest clinical neurosyphilis, and I have been led to record my observations in this paper.

At the time this paper was written, 1,371 patients with clinically evident syphilis of the central nervous system have been examined during approximately the last thirteen years. The types of involvement have been classified, and the percentage incidence of each type may be seen by referring to table 1.

One hundred and eighty-seven, or 12.9 per cent, of these clinically neurosyphilitic patients exhibited complicating tertiary lesions. By reference to table 1 it will be seen that with the exception of the high frequency of cardiovascular syphilis in patients with tabes dorsalis, these complicating lesions occur most commonly in that heterogeneous group of neurosyphilitic disorders which is usually classified as meningovascular, and does not include early syphilis of the central nervous system (neurorecurrences and early acute meningitis), dementia paralytica and tabes dorsalis. One hundred and twenty-five, or 66 per cent, of these patients presented themselves to the clinic because of symptoms due to the tertiary lesion, unrelated to their disease of the nervous system, whereas 62, or 33 per cent, came primarily because of symptoms

* Submitted for publication, Jan. 18, 1929.

* From the Syphilis Division of the Medical Clinic, the Johns Hopkins Hospital.

1. Moore, J. E.: Studies in Asymptomatic Neurosyphilis: II. The Classification, Treatment and Prognosis of Early Asymptomatic Neurosyphilis, Bull. Johns Hopkins Hosp. **33**:231, 1922; Asymptomatic Neurosyphilis: V. Comparison of Early and Late Asymptomatic Neurosyphilis, Arch. Dermat. & Syph. **18**:99 (July) 1928.

directly referable to neurosyphilis. The duration of infection varied from six months to forty-one years. Ninety-nine of the 187 patients manifested only signs of neurosyphilis, 77 showed both signs and symptoms, and 11 symptoms alone. In 99 cases, the cerebrospinal fluid tests gave positive results; in 18, the tests were negative, and in 70, lumbar puncture was not performed. Only about 50 per cent of the patients gave a history of early syphilis, which is in accord with reports by other workers. A study of the race and sex distributions, shown in table 2, confirms the well known tendency of the male, and especially of the

TABLE 1.—*Types of Tertiary Syphilis Observed in 1,371 Neurosyphilitic Patients*

	Total Cases	Cardiovascular		Skin and Mucous Membrane		Bone		Viscera		Per Cent with Tertiary Lesions of Any Type
		Cases	Per Cent	Cases	Per Cent	Cases	Per Cent	Cases	Per Cent	
Early syphilis of the central nervous system	113	1	0.9	2	1.8	2	1.8	1	0.9	5.3
Dementia paralytica	112	5	4.4	1	0.9	1	0.9	0	0.0	6.1
Tabes dorsalis	242	28	11.5	1	0.4	15	6.1	1	0.4	12.4
Other types	794	64	8.0	42	5.3	38	4.8	20	2.5	20.6
Clinical syphilis of the central nervous system	1371	98	7.1	46	3.2	53	4.0	22	1.6	12.9

TABLE 2.—*Race and Sex Distribution of Tertiary Lesions in Neurosyphilitic Patients*

			Duration of Infection	
	Cases	Per Cent	Cases	Per Cent
White male	52	27.8	30	57.6
White female	27	14.4	5	18.6
Colored male	79	42.2	47	55.6
Colored female	28	15.5	8	27.5
			90	

colored male, to exhibit multiple and grave tertiary lesions elsewhere than in the nervous system. The paucity of early lesions in and the resistance of the female to serious lesions is borne out.

Syphilis of the heart or aorta constituted the most frequent and important complication. The close association between cardiovascular syphilis and neurosyphilis has long been known and discussed. In 1875, Francis Welch, quoted by Beattie,[2] demonstrated syphilitic lesions of the heart or aorta at autopsy in 34 of 56 cases of neurosyphilis. Longscope,[3] in 1913, called attention to the frequency of involvement of the central nervous system in syphilitic aortitis, and conversely, Beattie [2] stated that aortic disease is very common in tabetic patients.

2. Beattie, Thomas: Visceral Syphilis, Brit. M. J. **2**:177, 1921.

3. Longcope, W. T.: Syphilitic Aortitis: Diagnosis and Treatment, Arch. Int. Med. **11**:15 (March) 1913.

Moore [4] found that 17 per cent of 94 patients with cardiovascular syphilis had simultaneous asymptomatic involvement of the neuraxis. In this series, syphilis of the heart or aorta, occurred almost twice as frequently as any other complicating tertiary lesion. Aortitis was especially frequent, particularly in the colored male. Sixty-three cases were encountered, 19 of these exhibiting classic symptoms, with, in nearly every case, aortic dilatation, as seen fluoroscopically. The remaining 44 had no complaints referable to the cardiovascular apparatus, but had distinct widening of the retromanubrial dulness due to a dilated aorta, which, in every case, was observed by the fluoroscope and measured by teleoroentgenogram. In addition, there were 26 patients with aortic regurgitation; 19 with aortic aneurysm; 4 with angina pectoris, and 9 with severe myocarditis in association with the syphilitic infection. This high incidence of syphilitic heart lesions in neurosyphilis constitutes a plea for its early recognition and treatment. Heart disease presents an almost insurmountable barrier to effective therapy and good prognosis of involvement of the central nervous system.

Bone and joint syphilis made up of osteitis, periostitis and arthritis (52 instances) and Charcot joint (14 instances), occurred in 56 cases, or 5 per cent. Prokoptschuck,[5] in a series of 620 patients with advanced neurosyphilis, found that 10.3 per cent had bone and skin lesions, and used the fact as evidence against the existence of a neurotropic strain of *Spirochaeta pallida*. It is interesting to note that neither gummatous lesions of the septum or palate nor Charcot joint has been observed in the colored female in this series of cases, whereas they have been most frequent in the white male.

Thirty-five patients, or 2.4 per cent, showed tertiary skin lesions, most commonly of the nodular ulcerative type; 11, or 0.8 per cent, showed gummatous lesions of mucous membranes, in all cases confined to the upper respiratory tract. In this connection, it may be said that at least 6 of the 123 cases of neurorecurrence and early meningitis showed simultaneous secondary skin lesions. Very little difference was noticed as to race and sex distribution in the patients with tertiary skin lesions in neurosyphilis. Adrian [6] reported a 22 per cent incidence of skin lesions in neurosyphilis. Horgan,[7] reasoning from Kyrle's and his own observations, stated that in all cases of gummas (presumably of the skin, although he does not make this quite clear), in which the spinal fluid gives a positive reaction, whether accompanied by nervous

4. Moore (footnote 1, second reference).

5. Prokoptschuck, A.: Skin and Bone Lesions in Neurosyphilis, Arch. f. Dermat. u. Syph. **150**:361, 1926.

6. Adrian: Ueber das Gleichzeitige Vorkommen von Manifester Syphilis und Tabes, Ztschr. f. klin. Med. **55**:327, 1904.

7. Horgan, M. J.: Modern Aspects of Syphilis, London, Oxford Univ. Press, 1923, p. 59.

manifestations or not, the positive reactions are lost sooner or later, regardless of the adequacy of treatment. He observed 8 patients with tabes and coincident gummas, in 7 of whom the spinal fluid became normal after comparatively little treatment, and who showed also decided clinical improvement in the signs and symptoms of tabes. He agreed with the Viennese school, that this phenomenon favors the hypothesis that a high degree of cutaneous allergy exercises a favorable effect on an existing meningeal neurosyphilis, and that, conversely, the absence of this allergy predisposes to the development of parenchymatous neurosyphilis; hence, in Horgan's opinion, the extremely low incidence of cutaneous tertiary lesions in dementia paralytica or tabes. In the 242 tabetic patients in this series, tertiary skin lesions occurred in only 1 case. Most of the late skin lesions occurred in meningovascular (unclassified) neurosyphilis. Of the 35 cases with skin lesions, only 5 were observed for a period of time long enough for comparison with Horgan's statement. In the first of these cases, that of a patient with syphilitic hemiplegia and coincident gummas of the leg, and a spinal fluid of the paralytic formula type at the end of three and one-half years after only one course of arsphenamine (3.6 Gm.), the spinal fluid showed only a weakly positive reaction to the globulin test, all other tests being negative. Another patient whose condition was diagnosed as incipient dementia paralytica with gummas of the skin, whose spinal fluid was of the paralytic formula type, showed a negative reaction of the spinal fluid at the end of seven years after sporadic treatment over a period of only three years. Still another patient with incipient dementia paralytica, gumma of the tonsil and spinal fluid of the paralytica formula type, showed but slight clinical or serologic change after fairly continuous treatment for three years. A fourth patient, with diffuse meningovascular neurosyphilis, gummas of the skin, and a partially positive spinal fluid, showed only moderate clinical and serologic improvement after treatment for one and three-quarters years. The fifth patient, who had early optic atrophy associated with cutaneous gummas and whose spinal fluid was not examined, progressed in three years to partial blindness in spite of treatment. In this very limited number of comparable cases, my observations do not coincide with those of Horgan.

Lesions of the viscera were not numerous, being diagnosed in only 21 cases, or 1.6 per cent. Syphilis of the liver, heads the list in frequency, with 5 cases. Gumma of the testis, and syphilis of the stomach (proved at operation or autopsy) each occurred 4 times; syphilis of the rectum twice; and gumma of the iris, lacrimal gland, cervical glands, striated muscle and spleen, each once.

This study, therefore, bears out earlier observations that tertiary lesions (excepting cardiovascular involvement) are uncommon in asso-

ciation with parenchymatous neurosyphilis (tabes and dementia paralytica), but much more frequent in diffuse meningovascular neurosyphilis. This suggests that parenchymatous neurosyphilis may actually occur on account of a special type of individual immune reaction, different from that developed in patients prone to gummatous tertiarism, or to the occurrence of the meningovascular type of neuraxis involvement.

SUMMARY

1. In 1,371 cases of clinical neurosyphilis, tertiary lesions occurred elsewhere than in the central nervous system in 187, or 12.9 per cent.

2. Cardiovascular, bone and joint lesions (if Charcot joints be included) occurred most commonly in tabetic patients with the exception of this group of lesions, tabetic and paralytic patients and those with early neurosyphilis showed the lowest incidence of complicating tertiary lesions.

3. Cardiovascular lesions occurred in 98 cases, or 8.1 per cent, being the most frequently observed complication. Colored males were especially susceptible.

4. Bone lesions occurred in 56 cases, or 5 per cent. Lesions of the septum and bony palate and Charcot joint were not observed in the colored female.

5. Cutaneous tertiary lesions occurred in 35 cases, or 2.4 per cent, the predominant lesions being of the nodular ulcerative type. No evidence was found to suggest that these patients spontaneously lose the positive reaction in the spinal fluid.

6. Syphilis of the liver was the most common complicating visceral lesion.

7. Lesions of the mucous membrane were found in 11 cases, or 0.8 per cent.

8. In this study, negro males were most susceptible to multiple and grave complicating lesions.

HYPERSENSITIVENESS OF THE SKIN TO ARSPHENAMINE AS DETERMINED BY THE CONTACT TEST

ITS RELATIONSHIP TO ARSPHENAMINE DERMATITIS *

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Among the disagreeable by-effects of arsphenamine, the severe dermatitis, although it occurs only in a small percentage of cases, is of paramount importance. This is particularly true of the eczematous type of eruption which usually appears after a number of injections have been administered or at the end of the course of treatment. Among the causes of death due to arsenical medication, this type of dermatitis accounts for the greatest number. Even in cases without a lethal outcome, this condition is a source of great anxiety to the physician on account of the duration and severity of the illness and especially because of the uncertain prognosis. It is therefore obvious that any method that could detect the cases in which such a dermatitis is likely to develop would be of great value, as it would enable the physician to adopt suitable prophylactic measures.

That a percentage of patients who have recovered from arsphenamine dermatitis are cutaneously sensitive to the drug is well known. In the literature, one finds numerous reports that patients who have recovered from arsphenamine dermatitis react to skin tests with arsphenamine differently from normal persons; that is, that they give evidence of hypersensitivity of the skin to arsphenamine. Kagelmann,[1] for instance, reported that intradermal tests with arsphenamine in this type of patient, while negative for some time after the disappearance of the dermatitis (desensitization phase), become positive when tests are made at a later date, and thus demonstrate the hypersusceptibility of the skin of those who have had dermatitis. Other authors, for instance, Klauder,[2] Stuart

* Submitted for publication, Jan. 2, 1930.

* From the Venereal Disease Service of the Kingston Avenue Hospital.

1. Kagelmann: Arch. f. Dermat. u. Syph. **153**:173, 1927.

2. Klauder, J. V.: Hypersensitiveness to Local Contact with the Arsphenamines Producing Chronic Eczematoid Dermatitis and Asthmatic Symptoms, Arch. Dermat. & Syph. **5**:486 (April) 1922.

and Maynard [3] and Moore and Keidel [4] have recorded similar observations. However, to our knowledge, there does not exist at present any means for determining in advance whether a given patient is prone to react with a dermatitis on the administration of arsphenamine.

The three methods most commonly used for the determination of skin sensitiveness are: (1) intradermal injections of the substance in question, (2) its application to a superficial scratch and (3) the contact test by means of an impregnated patch.

In testing for susceptibility to the arsphenamines, the first two named do not seem suitable for a number of reasons. In the first place, the experiments of Frei [5] showed that intradermal injections of arsphenamine sensitize the subject in a certain percentage of cases, and Stauffer [6] reported similar sensitization after the scratch test. The possibility exists that such sensitization may lead to serious consequences on subsequent intravenous injection of arsphenamine. Moreover, the dermatitis with which we are especially concerned is not of urticarial, but is of eczematous type. Intradermal and scratch tests do not seem suitable for the investigation of the eczematous type of dermatitis, and consequently the contact test appears to be the one of choice.[7] Stauffer's experiments with the contact test in patients who had had eruptions due to treatment with arsphenamine show that some of them gave strongly positive reactions.

For all these reasons, it seemed possible that in the contact test we might possess a means of detecting the sensitivity of a patient's skin to arsphenamine before the administration of the drug, and that this test might serve to prognosticate the patient's liability to the development of dermatitis. This possibility appears more probable since, according to Stauffer, certain persons who have apparently had no prior contact with arsphenamine nevertheless yield positive reactions to the patch test. However, this does not decide the important question whether patients with a hypersensitiveness of the skin demonstrable by the patch test are subject to arsphenamine dermatitis and whether those negative to the patch test are not.

This study has for its purpose an inquiry into these questions; in particular, to ascertain whether the disposition for the development of arsphenamine dermatitis can be determined in advance by means of a

3. Stuart, H. C., and Maynard, E. P.: Hypersensitiveness to Arsphenamine Following Exfoliative Dermatitis, Arch. Int. Med. **26**:511 (Nov.) 1920.

4. Moore, J. E., and Keidel, A.: Dermatitis and Allied Reactions Following the Arsenical Treatment of Syphilis, Arch. Int. Med. **27**:733 (June) 1921.

5. Frei: Klin. Wchnschr. **12**:539, 1928.

6. Stauffer: Schweiz. med. Wchnschr. **43**:8, 1928.

7. Stauffer (footnote 6). Sulzberger, M. B., and Wise, J.: Ragweed Dermatitis: With Sensitization and Desensitization Phenomena, J. A. M. A. **94**:93 (Jan. 11) 1930.

skin contact test. Five hundred and three patients were employed; 210 of these were syphilitic and 293 nonsyphilitic. While the majority of the syphilitic patients were in the first two years of the infection, there were also some late cases. As nearly as could be ascertained, the syphilitic patients had had no prior treatment with any of the arsphenamine preparations. They were selected with this point in mind. The nonsyphilitic patients were used as controls. All were ward patients; consequently, an exact observation of all reactions was possible during an extended period of time.

METHOD

The tests were carried out as follows: Before any treatment was administered, an arsphenamine contact test was performed. A piece of cloth about one-half inch square was soaked in a 10 per cent solution of neutralized arsphenamine and applied to an area of intact skin on the patient's back. This was covered with sufficient gutta percha to extend beyond the borders of the soaked cloth. Both

Results of Contact Tests with Arsphenamine

	Number Tested	Number of Positive Reactions to Arsphenamine*					Per Cent Positive
		1	1 to 2	2 to 3	3 to 4	Total	
Nonsyphilitic	293	7	24	23	6	60	21
Syphilitic	210	4	10	19	2	35	17

* The type and grade of reactions were classified according to Bloch, as follows: (1) redness; (2) redness and swelling with occasional papule; (3) marked redness and swelling, with more papules and an occasional vesicle; (4) marked redness, surface covered with papules and vesicles, and (5) very strong inflammation, with large blisters.

were held in position by a strip of zinc oxide adhesize plaster. The test patch remained in place during twenty-four hours, and was then removed and the reaction read. Further readings were made at intervals during the course of several weeks in order to note delayed reactions. The results appear in the accompanying table.

From several days to one week following these tests, the usual courses of arsphenamine plus bismuth, or neoarsphenamine plus bismuth, were instituted for syphilitic patients. The skin of all patients was examined from time to time to note any flare-up or focal reaction at the test site or the appearance of a dermatitis.

OBSERVATIONS

Of 293 nonsyphilitic patients, 60, or approximately 21 per cent, had a positive reaction to the contact test. Of 210 syphilitic patients, 35, or approximately 17 per cent, had a positive reaction to the test.

In the nonsyphilitic group, the reactions were as follows: in 7, redness (reaction 1); in 24, reactions ranging from redness to redness and swelling with an occasional papule (reactions 1 to 2); in 23, reactions ranging from redness and swelling with an occasional papule, to marked redness and swelling, more papules and an occasional vesicle (reactions 2 to 3); in 6, reactions ranging from the latter condition to marked

redness and the surface covered with papules and vesicles (reactions 3 to 4).

In the syphilitic group, 4 patients had reaction 1; 10, reactions 1 to 2; 19, reactions 2 to 3; 2, reactions 3 to 4.

None of the patients showed a flare-up or focal reaction at the test site during their stay in the hospital, which covered a period of at least eight weeks.

Two cases of typical arsphenamine dermatitis were observed among the patients treated. Urticarial and other transitory early eruptions of the noneczematous type are disregarded, as they are considered irrelevant to the purposes of this study. In one patient (M. W.), the eruption appeared after the fourth injection of arsphenamine. In the second patient (B. N.), the dermatitis appeared after the seventh injection. In neither case was any reaction of the test site observed at the time of the appearance of the dermatitis.

Neither of the patients who developed dermatitis had had a positive reaction to the skin contact test.

None of the patients who had shown positive reactions to the skin contact tests developed dermatitis on subsequent injection of arsphenamine.

COMMENT

Three facts in these results seem of importance: (1) the fact that there exists an apparently primary sensitiveness of the skin to arsphenamine in contact tests; (2) the fact that patients who give a positive reaction to the contact test do not necessarily develop dermatitis on intravenous injections of the drug; (3) the fact that patients who give a negative reaction to the contact test may develop a dermatitis following the intravenous administration of arsphenamine.

With regard to the first fact, it was noted that there was a slight difference in the percentage of sensitive persons as between the syphilitic and nonsyphilitic groups. We do not consider this significant in consideration of the comparatively small total. Although it is conceivable that the syphilis may here play a rôle, the variation could also be accounted for by the laws of chance, subjective differences in the reading of the reactions, etc.

We do not think that the apparently primary sensitiveness here observed, which confirms the observations of Stauffer, necessarily proves the existence of a hereditary sensitiveness, but rather that a sensitization through previous contact with arsenic in some form may explain this phenomenon. Such arsenic (infinitesimal quantities suffice) may reach the patient in food (Throne, van Dyck, Marples and Meyers[8]), wall

8. Throne, van Dyck, Marples and Meyers: Arsenic Findings in Dermatological Conditions, New York State J. Med. **27**:757, 1927.

paper, sprays for plants, insecticides, beauty pills, etc., or may pass from mother to fetus. Further investigation is here necessary to determine, for instance, whether the sensitiveness to arsphenamine is also a sensitiveness to arsenic in other forms. Frei and Mayer [9] showed that in three cases investigated the hypersensitiveness was not limited to arsphenamine alone, but was present to other organic arsenic compounds as well.

The second and third points brought to light by this investigation can be discussed together. They prove that this method of testing is not capable of determining in advance whether or not a dermatitis may develop in the patient following the administration of arsphenamine, for neither were the negative persons immune nor the positive ones evidently susceptible.

The significant fact that patients who gave positive reactions to arsphenamine in the contact tests did not in a single instance develop a dermatitis may possibly be explained by the quantitative hypothesis first mentioned by Jadassohn [10] in connection with dermatitis due to mercury; namely, that the quantity of the drug applied to a certain area by means of the contact test is necessarily much greater than the quantity reaching a like area of skin on intravenous administration of the drug. The sensitivity of the patient's skin may have been sufficient to cause a reaction to the quantity in the contact test and not sufficient to cause a reaction to the much smaller quantity brought by the blood stream to the test area. There are, of course, other possible explanations of this phenomenon, but these are too theoretical for discussion here.

The fact that two patients who gave negative reactions to the contact test developed eczematous dermatitis is more difficult to explain. On account of their importance, a summary of each of the two cases seems necessary.

REPORT OF CASES

CASE 1.—M. W., aged 22, was admitted to the hospital on June 7, 1929. On clinical examination, the patient showed nothing noteworthy. The Wassermann reaction was 4 plus. An arsphenamine contact test performed on June 7, 1929, proved negative. The patient had had no prior treatment for syphilis. The Schick test proved positive, and the patient was therefore given 3,000 units of antitoxin on June 9.

Protocol of Treatment, Wassermann Tests, etc.: On June 8, bismuth was administered; Wassermann reaction, 4 plus; June 9, diphtheria antitoxin; June 10, arsphenamine, 0.2; June 12, bismuth; June 15, bismuth; June 17, arsphenamine, 0.3; June 18, an urticarial eruption of mild grade, regarded as a serum reaction; June 22, eruption completely gone; June 23, neoarsphenamine, 0.2; June 25, no

9. Frei and Mayer: Arch. f. Dermat. u. Syph. **153**:606, 1927; see literature cited here.

10. Jadassohn, J.: Zur Kenntnis der medicamentösen Dermatosen, Fifth Deutscher dermatologischer Kongress, Vienna, Wilhelm Braumüller, 1896.

reaction to neoarsphenamine, patient feeling well; June 26, bismuth; June 29, Wassermann reaction doubtful; July 1, neoarsphenamine, 0.3; July 3, bismuth; July 4, slight edema of eyelids noted; July 5, generalized erythematous eruption with itching, which on July 8 was slightly moist in various parts of the body; July 11, desquamation of mild grade noted, which was completed about July 20; July 20, Wassermann reaction negative. From this date on, treatment consisted only of injections of bismuth on the following dates: July 24, 27, 31, August 3, 9, 14, 17, 24. On August 28, the Wassermann reaction was negative. On August 16, it was noted that the patient presented a mild grade of generalized alopecia of the scalp. The patient was discharged on Sept. 5, 1929, in a satisfactory state.

CASE 2.—B. M., aged 35, was admitted to the hospital on March 2, 1929, with asymptomatic syphilis. The Wassermann reaction on admission was 4 plus. The arsphenamine contact test was negative.

Protocol of Treatment, Wassermann Tests, etc.: March 3, bismuth was administered; March 4, arsphenamine, 0.2; March 6, bismuth; March 9, Wassermann reaction 4 plus; March 10, bismuth; March 11, arsphenamine; March 16, Wassermann reaction 3 plus; March 17, bismuth; March 18, arsphenamine, 0.3; March 20, bismuth; March 24, bismuth; March 25, arsphenamine, 0.3; March 27, bismuth; March 30, Wassermann reaction 4 plus; March 31, bismuth; April 1, arsphenamine, 0.3; April 3, bismuth; April 6, Wassermann reaction 4 plus; April 7, bismuth; April 8, arsphenamine, 0.3; April 10, bismuth; April 12, appearance of a generalized erythematous eruption; April 14, eruption more marked, vesicular, with considerable itching; April 24, areas of desquamation noted; April 27, Wassermann reaction 4 plus; May 11, patient discharged in a satisfactory state.

The treatment for the dermatitis in both cases consisted of sodium thiosulphate, saline laxatives, suitable diet and soothing local applications.

It is to be noted that M. W. developed a sensitiveness of the skin to serum between the time of the negative contact test and the appearance of the arsphenamine dermatitis. It must here be stressed that the serum eruption was a typical urticarial exanthem and the arsphenamine dermatitis a typical exudative eczematoid eruption followed by desquamation. The first eruption had completely disappeared before arsphenamine was again administered. The arsphenamine dermatitis appeared twelve days after the injections were resumed. This case is complicated by the occurrence of the serum exanthem; the possibility must be borne in mind that the sensitization to arsphenamine may have been in some way due to the intervening sensitization to serum either on the basis of polyvalent sensitization or through the increase of the general susceptibility of the skin subsequent to the serum eruption.

In case 2, no such explanation is necessary, and it is regarded as a straightforward case of dermatitis in spite of the previous negative result of the contact test. A definite explanation is difficult, but perhaps the most plausible one is that a sensitization may have occurred between the time of testing of the skin and the appearance of the dermatitis, although this is by no means the only possibility.

CONCLUSIONS

1. Of persons not previously treated with arsphenamine, approximately from 17 to 21 per cent reacted to the contact test with this drug.

2. There were no marked differences in sensitiveness between syphilitic and nonsyphilitic patients; the syphilitic group was slightly less sensitive.

3. In none of the patients who had positive reactions to the contact test did dermatitis develop on subsequent intravenous injections of arsphenamine. In two patients who had not had positive reactions to the contact test a dermatitis developed.

4. The contact test as used in this study does not indicate whether arsphenamine dermatitis is likely to develop in a patient.

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ECZEMA—"TO BE OR NOT TO BE . . ."*

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THE QUESTION

The word "Eczema" has outworn its usefulness and is discredited. The doom of the word is probably written. It will survive, where it belongs, and with no greater repute than attaches in general to the outworn and discredited. Its history disclosed at the outset a floundering in a quagmire of ignorance and an emergence upon semi-solid ground after much travail of keen observation and writing. . . . There are few experts who now use it without a species of mental reservation or qualification. There is no eczema in the absence of dermatitis.

Thus did James Nevins Hyde,[1] a quarter of a century ago, express himself editorially in the *Journal of Cutaneous Diseases.*

Hyde may or may not have been a false prophet (twenty-five years is but a short period in medical history, and final judgment will have to be postponed), but the foregoing prognostication, if it may be called such, has yet to see fulfilment. True, eczema has also been pronounced dead or dying by others since Hyde; Hazen,[2] for example, ten years ago prophesied that "the day will come when the word 'eczema' will no longer be used, just as the word 'rheumatism' is now passing from usage"; but, both heedless of the person who made the pronouncement and regardless of his reasons for so doing, the term eczema today is neither dead nor obsolete, but is, on the contrary, much alive and in fashionable repute, as a glance through the pages of the current issues of almost every medical journal and recent textbook on dermatology will reveal.

After all, Hyde was anything but rash. As a matter of fact, he was one of the most conservative of dermatologists, and when he wrote the aforementioned obituary notice, he must have had at the time what, in his opinion, were sound, logical and convincing proof and justification for so doing. Nevertheless, twenty-five years later, eczema not only still is eczema, but, in the words of the popular song of the day, is perhaps even "bigger and better than ever."

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* Read before the Clinical Society of the Skin and Cancer Hospital of Philadelphia, Jan. 21, 1930.

1. Hyde, J. N.: The Passing of Eczema, J. Cutan. Dis. **22**:30 (Jan.) 1904.
2. Hazen, H. H.: The Etiology of Eczema, Arch. Dermat. & Syph. **38**:642 (June) 1920.

The how and the why of all this is a long story. In the first part of this paper I shall endeavor to explain it as briefly as possible and in conclusion offer a suggestion for its solution.

ITS HISTORY

The term eczema has been known through the ages. Etymologically, it is derived from the Greek word "*ἐκζεῖν*," meaning "to bubble, to boil over, or to burst out," and, although it was first used by Hippocrates (460-377 B. C.), there is some doubt as to whether he employed it to describe the condition in the sense that it is now known, or whether as Pusey has pointed out, its use was confined by him to the entity commonly referred to as boils. It is generally agreed, however, that the modern conception of eczema dates back to the English dermatologist, Robert Willan (1757-1812). Between the time of Hippocrates and that of Willan, medical literature does not have many references to eczema. The writings of Celsus (22 B. C.-50 A. D.), as do those of Pliny, the Elder, (23-79 A. D.), seem to indicate a familiarity with scabies, prurigo and eczema. Galen (130-201 A. D.), the greatest Greek physician after Hippocrates, whose voluminous medical writings were surrounded with an aura of infallibility that endured for fourteen centuries, contributed but little to the knowledge of eczema. Aetius from Amida in Mesopotamia (543 A. D.) is credited by Ravogli [3] with being "the first to apply the name of eczema to eruptions consisting of small pustules, accompanied by burning sensation and pain, which sometimes spread to the whole body." The same authority also stated that the term eczema was applied to pustules by Paul Aegineta of the seventh century, and that Manardus (1528) and Gorraeus (1578) gave incomplete descriptions of eczema. Until the latter part of the eighteenth century, however, the best that can be said, both of the existent knowledge of dermatology in general and of eczema in particular, is that it was rather scattered, indefinite and more or less inchoate.

The first semblance of system and order out of the chaos that was dermatology appeared when Plenck of Vienna, in 1776, published his volume on "Doctrina de morbis cutaneis," and when Willan of London, from 1797 to 1808, serially published his work "On Cutaneous Diseases." It is in this latter volume and especially in "A Practical Synopsis of Cutaneous Diseases" (incorporating and completing the last mentioned work and published the year following Willan's death by his pupil and associate Bateman) that eczema as it is known today was wished on the medical profession, and has kept the dermatologic world in a controversial turmoil ever since.

3. Ravogli, Augustus: History of Dermatology, Medical Life **33**:495 (Nov.) 1926.

Willan's description was far from complete, but it was sufficient to start the ball rolling, and what he failed to include others hastened to insert. Thus, for example, Willan and Bateman [4] stated:

> Eczema is characterized by an eruption of small vesicles on various parts of the skin—usually set in close or crowded together—with little or no inflammation around their bases, and unattended by fever. It is not contagious. This eruption is generally the effect of irritation, whether internally or externally applied, and is occasionally produced by a great variety of irritants, in persons whose skin is constitutionally very irritable. According to the nature of the irritating cause, the extent and form of the disease are somewhat various.

The authors then go on to mention various types of pustules, boils, inflamed tubercles, excoriations, fissuring, scabs, scales, and various discharges of a serous, milky, brownish, acrid or ichorous character which gradually become thicker and more adhesive "stiffening the linen which absorbs it." Incidentally, Willan also divided eczema into three types: (1) eczema solari, (2) eczema impetiginodes and (3) eczema rubrum; his descriptions need not be gone into here.

Others who contributed to the completion of the clinical picture of eczema were Rayer, who created the extraordinary multiformity of the disease; Devergie, who separated Willan's and Rayer's eczemas and also set up four cardinal symptoms for the condition: redness, secretion, porosity of skin surface and itching; Erasmus Wilson, who was the first to declare that the dry forms were as much eczema as the moist; and McCall Anderson, who emphasized the fact that the hyperemic scaly patch was an important form of the commencement of eczema." [5]

So much then for the earlier contributors to this subject, who, typical of the men of the first or early period of modern dermatology, confined their attention to the external appearances of the various eruptions. To their completed clinical conception of the polymorphism of eczema, however, virtually nothing new has been added to this day.

Then followed the second or the histopathologic period in the modern development of dermatology, the fountainhead of which was Ferdinand von Hebra (1816-1880). The contributions of this genius to the problems of etiology and therapeutics, coupled with his new system of classification of diseases of the skin, based not on their external manifestations, as were those of Plenck and of Willan, but on their anatomopathology, laid the foundations for a new science and earned for this investigator universal recognition as the "father of modern dermatology."

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4. Bateman, Thomas: A Practical Synopsis of Cutaneous Diseases, according to the arrangement of Dr. Willan, ed. 2 ("this edition is merely a reprint [several months later] of the former"—Bateman), London, Longman, Hurst, Rees, Orme & Brown, 1813, p. 247.

5. Knowles, F. C.: The External Origin of Eczema, Particularly the Occupational Eczemas, J. Cutan. Dis. **31**:11 (Jan.) 1913.

To Hebra dermatologists are indebted for rescuing scabies out of the realm of eczema and establishing it as a true clinical entity. This he did, first, by clearing up the problem of the contagiousness of scabies by experimentally inoculating himself and others with the acarus; and secondly, by studying the cutaneous lesions primarily induced by the irritating activities of the itch mite itself, and those secondarily induced by other factors, such as the traumatizing finger-nails. He found that the excoriations that the latter provoked near the lesions of scabies, superinduced hyperemic exudations, papules, vesicles, pustules, oozing, crusting, etc., in one word, eczema. With these epochal discoveries (published in 1844, ten years after Renucci's demonstration of the acarus), thus proving that scabies was a purely local disease, collapsed the whole previously accepted hypothesis of the "scabetic diathesis" and the humoral origin of the lesions associated with scabies. For authorities then still believed that in scabies not the skin alone was infected, but also the internal organs, and that the clearing up of the eruption on the skin meant the sending of it back into the internal organs. It seems odd, indeed, that though the acarus and its natural history were then well known, Hebra, as well as most others, was, in 1842, still speaking of a psoric dyscrasia and writing on the spontaneous generation of scabies, though still maintaining that scabies was produced by contagium. It was, therefore, by the work that he published in 1844 that the status of scabies and its relationship to other diseases, cutaneous and otherwise, were definitely established. It was also this work that led Hebra to undertake intensive experimental, clinical and histopathologic studies of eczema as caused by artificial means, leading later to the establishment of his revolutionary dictum that "all superficial catarrhal inflammations of the skin caused by irritants are eczemas."

The influence of Hebra had a profound impression on dermatologic investigation and lasted until late in the nineteenth century when, under the leadership of Unna and Sabouraud, the third or parasitic (bacteriologic and mycotic) era entered into its period of glorious ascendancy, supplementing rather than displacing Hebra's teachings. This period has now in turn been further supplemented, if not superseded by the present or biochemical era, which had its inauguration with the work of Ehrlich and is, as all dermatologists know, being prosecuted with great vigor and intensity in relation to both the therapy and the etiology of cutaneous as well as other diseases of the body. The relationship of eczema to the third and fourth periods of modern dermatology will be mentioned later in this article.

ITS IMPORTANCE

"Considering the frequency with which eczema is encountered in practice, the distress and economic loss that it causes patients, and the

difficulties which surround its successful treatment," one may readily agree with Morrow, Hartzell, Pusey and other dermatologists of generations past as well as present that "eczema constitutes one of the most, if not the most, important of all diseases of the skin." A glance at some of the statistics with regard to the prevalence of this condition is illuminating.

Thus, Morrow [6] stated that "It occupies certainly more than one-half of the entire realm of dermatology." Hyde and Montgomery [7] ascribed to it from 20 to 40 per cent of all skin diseases; Schamberg,[8] 30 per cent; Hartzell [9] and Knowles,[10] quoting the statistics of the American Dermatologic Association, 30 per cent; MacLeod,[11] 25 per cent; and Goodman,[12] analyzing a total number of 973,090 published reports of cases of skin diseases by Bulkley (1898); Crocker (1903), Pollitzer (1914 and 1918), and the New York Skin and Cancer Hospital (1913 to 1927 incl.) found that the authors of these reports credit eczema with constituting, respectively, 26.11 per cent, 26.3 per cent, 17.3 per cent and 21.66 per cent of their cases. The average of all these figures, even purposely excluding those of Morrow, is 25.8 per cent. One may therefore conservatively assume that at least in one of every four patients with diseases of the skin that one is called on to treat the condition will be eczema.

That in this late day and generation confusion still exists, however, in the minds of many physicians with regard to their conception of just what is and what is not eczema, is, unfortunately, an evident and freely admitted fact. This, however, is not so surprising in view of the circumstance that there is still far from any unanimity of opinion among dermatologists themselves on the status of eczema and what it connotates.

When authorities like Hebra assign to eczema 16 per cent of all cases of skin disease; Ziemssen, Erasmus Wilson and McCall Anderson agree on 33 per cent; Hyde and Montgomery go as high as 40 per cent;

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6. Morrow, P. A.: System of Genito-Urinary Diseases, Syphilology and Dermatology, New York, D. Appleton & Company, 1894, vol. 3, p. 233.

7. Hyde and Montgomery: Diseases of the Skin, ed. 7, Philadelphia, Lea Bros. & Company, 1904, p. 356.

8. Schamberg, Jay F.: Diseases of the Skin and Eruptive Fevers, ed. 3, Philadelphia, W. B. Saunders Company, 1915, p. 53.

9. Hartzell, M. B.: Diseases of the Skin, Philadelphia, J. B. Lippincott Company, 1917, p. 116.

10. Knowles, F. C.: Diseases of the Skin, ed. 2, Philadelphia, Lea & Febiger, 1923, p. 141.

11. MacLeod, J. M. H.: Diseases of the Skin, London, H. K. Lewis & Company, 1920, p. 761.

12. Goodman, Herman: Statistics of the Ten Most Common Skin Diseases, Arch. Dermat. & Syph. **20**:186 (Aug.) 1929.

Morrow says over 50 per cent; and modern authorities (other than those previously quoted), for example, Stelwagon and Gaskill,[13] Sutton,[14] Pusey[15] and Ormsby[16] give 33, from 30 to 35, from 30 to 40 and from 20 to 40 per cent, respectively, then it must be said that something is and has been wrong, perhaps not so much with eczema itself as with the prevailing conception and interpretation of this condition, making for such wide variations in the figures just quoted.

It is small cause for wonder, then, to find Sutton[17] stating in a recent edition of his textbook:

> It is not possible at this time to formulate a satisfactory definition of this disorder, or to state precisely what the term includes and does not include. . . . The fact remains that eczema is only a sort of dermatological scrap-heap out of which, from time to time, certain diseases that present a characteristic and definite symptomatology are extracted.

In the effort to correct this most unsatisfactory situation, an enormous amount of study has been devoted to the subject during the past one hundred years, and especially so since the beginning of this century. The ultimate facts derived from such study, however, have unfortunately been far from uniform, and not infrequently even contradictory, and have resulted in the publication of countless articles expounding such a multiplicity of views as to serve only to make confusion worse confounded.

The timid hope that this paper may help to clarify the confused subject of eczema to those of its auditors to whom it still is more or less of a puzzle constitutes the apology for adding it to the already greatly overburdened literature on this topic.

THE ARGUMENT

Resolving conflicting opinions down to essential points of difference, I may say in brief that those who entertain a divergence of opinion with reference to eczema may be divided conveniently into three groups, which I shall identify as groups A, B and C. Tersely epitomizing their opinions, I may say further that those in group A believe that eczema is a true clinical entity; those in group B *insist* that eczema is not a true clinical entity, and those in group C affirm that eczema is, but really is not a true clinical entity.

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13. Stelwagon and Gaskill: Diseases of the Skin, ed. 9, Philadelphia, W. B. Saunders Company, 1923, p. 273.

14. Sutton, R. L.: Diseases of the Skin, ed. 7, St. Louis, C. V. Mosby Company, 1928, p. 266.

15. Pusey, W. A.: Principles and Practice of Dermatology, ed. 4, New York, D. Appleton & Company, 1926, p. 32.

16. Ormsby, O. S.: Diseases of the Skin, ed. 3, Philadelphia, Lea & Febiger, 1927, p. 237.

17. Sutton (footnote 14, p. 258).

Starting from this basis, it should first be determined (both for clarity and for aiding in the exposition of the argument) what prerequisites are necessary before a dermatologic condition may be constituted as a true clinical entity. The order and sequence in which they will be mentioned here do not matter so much, although, of course, some are far more vital than others. The essential thing is that at least several of the more important, if not all of them, should bear a certain characteristic constancy, uniformity and specificity with reference to the disease. These prerequisites or postulates, if I may be permitted to designate them as such, are as follows: (1) clinical (objective) morphology (primary and secondary lesions); (2) course; (3) associated (subjective) symptomatology (local, and constitutional, if any); (4) distribution; (5) pathology, and (6) etiology.

Granting their acceptance, the points of agreement and disagreement that exist among the aforementioned three groups with reference to these postulates as applied to eczema should be determined.

POINTS OF AGREEMENT

Clinical Morphology.—Eczema is protean in its manifestations. It is a polymorphous eruption of erythema, papules, vesicles, pustules, alone or in combination, associated with crusts, scales, thickening, infiltration, lichenification and fissuring. The vesicular element most often predominates. The lesions are not, but occasionally may be, sharply marginated.

Course.—Eczema may be acute, subacute or chronic, with a tendency for recurrence. It is not contagious. It has three stages of development: (1) an initial or hyperemic stage, characterized by erythema; (2) an eruptive or exudative stage, characterized by the presence of papules, vesicles or pustules; (3) a final desquamative stage, characterized by oozing, crusting, scaling, infiltration, etc., depending largely on the character of the preceding primary lesions.

Associated Symptoms.—Itching, burning and tingling sensations of variable degree or intensity are always associated with eczema; constitutional symptoms, only occasionally.

Distribution.—Eczema may be localized or generalized.

Pathology.—Macroscopically, eczema is a catarrh of the skin possessing the pathologic characteristics of an exudative inflammation. In other words, it is a superficial inflammatory condition analogous to catarrhal inflammation of mucous membranes. Microscopically, authorities are likewise agreed that the histopathologic picture of eczema differs in no sense from that of ordinary simple inflammation of the skin. In other words, then, there is nothing specific or characteristic of

the pathologic changes in eczema, either grossly or minutely, that differentiates it from cutaneous inflammatory phenomena such as could be produced by the action of any external irritant.

Thus it is found that, so far as the first five of the foregoing postulates are concerned, there is peace and harmony of opinion among the three groups. There is now left for consideration but one remaining postulate, namely, that of etiology.

Etiology.—It is this one salient factor that constitutes the sole point of disagreement among the three schools of thought concerning eczema. This difference of opinion is, indeed, definite and distinctive enough to permit the characterization of the attitude toward eczema of members of group A as conservative, or fundamentalistic; that of group B as radical, or atheistic; and that of group C (occupying a sort of compromise position between these two extremes) as liberal, or agnostic.

The contentions of each of these three groups will be closely examined.

GROUP A (CONSERVATIVES; ECZEMA FUNDAMENTALISTS)

The position and prestige that this group boasts of today is, for reasons that can be adduced from what will be mentioned subsequently, far different from that which it occupied in the early decades of the nineteenth century. Whereas its protagonists then were enthusiastic and aggressive, perhaps even arrogant, they have, ever since Hebra forevermore scuttled the age-old theory of the "scabetic diathesis," been constantly on the defensive and more and more apologetic, though none the less tenacious in their faithful adherence to the belief that eczema is a true clinical entity, the origin of which is constitutional.

Now, whereas primarily Willan himself had considered eczema "the effect of irritants, whether internally or externally applied," it is evident that his view had gained no wide acceptance; in fact, it was ignored. Had it been accepted, the literature of dermatology, no doubt, would hardly have been as vast as it is today, but what it might have lost in bulk the medical profession would have been compensated for many times over by the earlier and more rational conception and interpretation of the true nature of this condition.

However, the French school of dermatology, centering about the Hospital of St. Louis in Paris ("The cradle of dermatology") was, in the early decades of the nineteenth century, the dominant force in Europe, and, in fact, virtually dictated dermatologic thought and practice to the world. Alibert (and later his pupil Hardy) was then preaching the doctrine of the internal origin of eczema so well and so eloquently that it became the universal credo and one of the articles of

faith of all physicians of the time. Alibert [18] stated the belief that the disease, and especially infantile eczema, was an excrement—"a salutary purifying process enabling the body to rid itself of deleterious humors, and that the scratching provoked by the itching favored a still greater outflow of noxious humors." Hardy [19] maintained that eczema was a disease of the skin which recognized as its cause an alteration of the system which he called herpetic diathesis ("diathesis dartreuse"). Eczema and herpes constituted in his opinion two inseparable, virtually synonymous ideas, and the name "dartre" or herpes could be replaced by the expression "eczematous diathesis." The dermatologists on the other side of the English Channel also agreed with the French that eczema had a constitutional or diathetic basis, but inclined more to their own doctrine of a "gouty diathesis" as its causal factor. Elsewhere on the continent these and other "dyscrasias" and "diatheses," such as, for example, the neurogenic, tuberculous (scrofulous), rheumatic and the "exudative diathesis" of Czerny, were from time to time also invoked to explain the phenomenon of eczema.

Beginning, however, with the previously mentioned work of Hebra with reference to scabies, leading to his demonstration of the existence of a causal relationship between external noxae and eczema, and also because of subsequent advances made in the differentiation and separation from it of various dermatologic entities, eczema, as the older fundamentalists conceived it, has known no peace. Constantly harassed by "flank attacks," with many disastrous results, and subjected to continuous and unrelenting "frontal attacks" forever threatening its existence as a substantive disease entity, it has had to give ground repeatedly, and today the fundamentalists are found taking refuge in what is virtually their last stronghold of defense, namely, the argument that there are two kinds of eczema, true and otherwise. Eczema, they hold, is eczema, now as always, but if a given case of eczema is proved to be of purely external origin, their contention then is that it was not a true eczema but a false or pseudoeczema, or merely an inflammatory reaction of the skin to extraneous irritation.

A true eczema, in other words, must have an origin purely endogenous (and perhaps undiscoverable), certainly never exogenous and discoverable. The fact that innumerable cases of supposedly true eczemas have been proved to be otherwise, and that no case of true eczema has yet been conclusively demonstrated by anybody, does not affect the faith of the fundamentalists therein; failure has rather been due, they intimate, to lack of scientific resources or resourcefulness, or

18. Montgomery, D. W.: Jean Louis Alibert, the Clinician, Arch. Dermat. & Syph. **20**:508 (Oct.) 1929.

19. Ravogli (footnote 3, p. 508).

perhaps to both these factors. And it is this restricted and rather strategic position that the present day fundamentalists have so far been able to protect from successful assault, mainly because the unsolved mysteries of biochemistry have given it a Verdun-like impregnability.

Before taking up any further discussion of true or endogenous eczema, as the present day fundamentalists see it, I should like to recall some of the things that have happened to eczema in general that have served to deflate the glory and reduce the grandeur that was its proud boast in the days of Alibert and Hardy, to the less glorified—though still none too humble—estate which it rules today.

To begin with, it was compelled early to relinquish sovereignty over and admit the independence of many conditions that it had arrogantly included within its domain when Willan first started its triumphant march through the dermatologic world, a march the direction and command of which the French almost immediately took away from him. Thus, for example, such dermatoses as psoriasis, the lichens, pityriasis rosea, herpes zoster and others, which eczema had graspingly annexed, were early restored to their rightful autonomy and independence as true clinical entities altogether separate and distinct from eczema.

Then began the flank attacks. Hebra was the first to compel eczema, in 1844, to surrender a good bit of its territory for the establishment of the clinical entity known as scabies.

Tilbury Fox, in 1864, further successfully assaulted the domain of eczema and compelled the establishment of impetigo contagiosa as a clinical entity.

In 1869, Hebra differentiated eczema marginatum (tinea cruris) from the nonmarginated eczemas of the genitocrural region (while Körbner, Pick and Kaposi a few months later revealed the mycotic nature of the disease, although it remained for Castellani and Sabouraud [1905 and 1907] to demonstrate the specific fungi involved).

Duhring, in 1884, gained everlasting distinction for American dermatology when, as a result of the treaty of peace that he signed with eczema, dermatitis herpetiformis, occupying territory formerly belonging to eczema, was accorded an honored position in the league of dermatoses.

In 1887, Unna forced it to cede an enormous amount of its territory for the creation of seborrheic dermatitis as a clinical entity.

To Moukhtar, in 1892, and Whitfield, in 1908, as pioneers, and to numerous other investigators, chiefly Sabouraud, Castellani, Ormsby and Mitchell, C. J. White, Williams and to Weidman, belong the glory of conquest for dispossessing eczema of an enormous amount of its remaining territory for the establishment thereon of a separate and distinct clinical entity consisting of the eczema-like dermatoses of mycotic origin

attacking the extremities, and now known as epidermophytosis or eczematoid ringworm.

Nor is this all, for eczema has also suffered losses other than those mentioned. Thus to Vidal, in 1896, and to Brocq, belong the distinction of having established lichen simplex chronicus or neurodermite, as a clinical entity; and to Engman, in 1902, that of infectious eczematoid dermatitis.

That yeastlike organisms are etiologically responsible for many so-called "intertriginous eczemas" has been recognized ever since Fabry, in 1917, described a group of cases of eczema-like yeast infections of the hands under the name of erosio interdigitalis blastomycetica. Striking confirmation followed in 1925, when Jessner and Kleiner successfully applied Koch's postulates to a large series of experiments on interdigital yeast infections. To Castellani [20] belongs the credit for describing (1914-1919) the condition now called cryptococcosis epidermica, due to *Cryptococcus epidermidis*. White and Swartz [21] have also pointed out more recently, in 1928, that the cryptococcus, a yeastlike organism appearing as a round, budding body, is also the actual cause of many skin eruptions that are called eczema; and Cleveland White,[22] in 1928, successfully demonstrated superficial yeast infections as the causative organism in eczema-like eruptions of the smooth or glabrous skin, fulfilling all of Koch's postulates in his experiments.

And last, but not least, must be mentioned that tremendous and ever-enlarging group of venenate dermatoses to which belong the dermatergoses [23] or inflammations of the skin definitely related to the professions and trades and often referred to as occupational eczemas, a subject to the better understanding of which Paracelsus [24] (1493-1541) was probably the first to make any contribution. (Incidentally, it is worth noting, that Willan [4] himself, among other things, described under eczema such conditions as grocer's itch, bricklayer's eczema and blacksmith's eczema.)

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20. Castellani, A., in Castellani and Chalmer: Manual of Tropical Medicine, ed. 3, London, Baillière, Tindall & Cox, 1919, p. 2092.

21. White, C. J., and Swartz, J. H.: Cryptococcosis Epidermica, Arch. Dermat. & Syph. **18**:692 (Nov.) 1928.

22. White, Cleveland: Mycotic Dermatitis: Superficial Yeast Infections of the Glabrous Skin, New York State J. Med. **27**:1116 (Oct. 15) 1927; Superficial Yeast Infections of the Glabrous Skin: Further Clinical and Experimental Studies, Arch. Dermat. & Syph. **18**:429 (Sept.) 1928.

23. White, R. Prosser: The Dermatergoses or Occupational Affections of the Skin, New York, Paul B. Hoeber, 1929.

24. Fischer, Joseph: History of the Occupational Dermatoses, in Ullmann, Oppenheim and Rille: Die Schädigungen der Haut durch Beruf und gewerbliche Arbeit, Geschichte der Gewerbedermatosen, Leipzig, Leopold Voss, 1922, p. 16.

Thus has the vast territorial domain that a little more than a century ago included almost all of dermatology under the banner of eczema, been reduced to its present magnitude, which, delimited though it may be, still comprises, according to the figures of many present day authorities, from 25 to 30 per cent or more of all dermatology. But even so, eczema still knows no peace. Its own right to an autonomous existence is being more bitterly contested than ever before; flank attacks are still being persisted in by its enemies; its defensive resources are being penetrated more and more; but the day, however, that will see its claim to an exclusively endogenous origin conclusively demonstrated as specific rather than specious has not yet arrived.

So much, then, for some of the losses that the so-called flank attacks have inflicted on eczema. I shall now consider "true eczema" from the point of view of the contemporary fundamentalists, after which I shall take up the discussion of the frontal attacks on eczema by the radicals of group B.

On examining the contentions of various adherents of group A, one is rather struck by the fact that, even among themselves, there seems to be no unanimity of opinion as to just what constitutes a "true eczema." Thus, one stresses the endogenous etiology; another emphasizes the clinical pathology; a third insists that it is a condition of allergy; while still a fourth advances an argument which, in effect, states that things which are equal to the same thing are not equal to each other. To be more specific I shall quote the following examples:

Thus, Prosser White,[25] one of the foremost defenders of the faith in eczema, offers a comprehensive definition of it which, when analyzed, merely stresses its endogenous etiology. According to him, eczema is "an endogenous, inflammatory (recurrent) affection of the skin characterized at first by erythema, papules and vesicles, and later by scaly, weeping or crusted patches associated with itching or burning, and with indefinite or irregular borders." He goes on to add that "the precise causation of true eczema is pure speculation, and must remain so whilst our knowledge of biochemistry is so imperfect."

Samberger's[26] exposition on the basis of clinical pathology is as follows:

> Both extrinsic dermatitis and true eczema result from a superficial, or catarrhal inflammation. Both are accompanied by a hypersecretion of lymph. In the former, the lymphorrhea is observed only at the beginning of the malady, the dominant feature is the inflammation, though the patches may be moist. Excessive exudation from the papillae is continuous in eczema. This is its clinical and

25. White (footnote 23, p. 3).

26. Samberger, F.: A Précis on the Semeiology of the Diseases of the Skin, Prague, 1925, p. 291, quoted from White, R. P.: Dermatergoses, p. 74.

pathological sign. Weeping is always present at some stage. A scratch which continues to exude is an irrefutable proof of the hypersecretion of serum, and therefore of eczema.

If one is to deduce from this hair-splitting definition that continuous weeping is the pathognomonic and only sign of true eczema, then the distinction is a finely drawn one indeed, unquestionably too finely drawn to be universally accepted. One may, with good reason, doubt whether it will meet with unreserved acceptance even by the fundamentalists themselves. But even granting, for the sake of argument, that this constitutes the difference between extrinsic dermatitis and eczema, eczema automatically becomes a rare disease and at once loses its eminence as the commonest of all diseases of the skin, and is undeserving of the tremendous ado about it.

The work done in 1909 by Richet, who introduced the term "anaphylaxis," and that done by others in the years that followed, notably C. J. White,[27] Ramirez,[28] Towle,[29] Blackfan,[30] and Highman and Michael,[31] on sensitization to foreign proteins, has been seized on and employed as a mighty weapon of defense by the fundamentalists. Their ardor, however, has been subdued considerably by the restraining effect of further research, and especially by the more recent investigations and conclusions of Bloch,[32] Highman,[33] Klauder[34] and others on the manifold phases of sensitization, protein and otherwise.

Nevertheless, though the fundamentalists must now admit that sensitization may be exogenous as well as endogenous, and nonprotein as well as protein, many still hold fast to the belief that a true eczema is one that is solely of endogenous origin. Thus, for example, Crawford[35] epitomized the subject in this manner:

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27. White, C. J.: The Anaphylactic Phenomenon in Eczema Etiology and Treatment, J. Cutan. Dis. **34**:57 (Jan.) 1916; The Treatment of Eczema in Childhood, Boston M. & S. J. **178**:5 (Jan. 3) 1918.

28. Ramirez, M. A.: Protein Sensitization in Eczema, Arch. Dermat. & Syph. **2**:365 (Sept.) 1920.

29. Towle, H. P.: Protein Sensitization in the Production of Skin Diseases, Arch. Dermat. & Syph. **2**:531 (Nov.) 1920.

30. Blackfan, K. D.: Cutaneous Reactions from Proteins in Eczema, Am. J. Dis. Child. **11**:441 (June) 1916.

31. Highman, W. J., and Michael, J. C.: Protein Sensitization in Skin Diseases, Urticaria and Its Allies, Arch. Dermat. & Syph. **2**:544 (Nov.) 1920.

32. Bloch, Bruno: The Rôle of Idiosyncrasy and Allergy in Dermatology, Arch. Dermat. & Syph. **19**:175 (Feb.) 1929.

33. Highman, Walter J.: Allergy in Skin Diseases, Arch. Dermat. & Syph. **20**:151 (Aug.) 1929.

34. Klauder, Joseph V.: Clinical Aspects of Allergy in Dermatology, Arch. Dermat. & Syph. **19**:198 (Feb.) 1929.

35. Crawford, Stanley: Eczema in Infants, Children and Adults, Atlantic M. J. **29**:846 (Sept.) 1926.

Eczema is a condition of allergy. The internal or sensitization eczemas are the only true eczemas. The majority of the cases popularly termed "eczema" by the medical profession at large are due to external noxae or irritants and should therefore be classed with the venenate dermatoses.

Sir Malcolm Morris [36] differentiated true eczema from dermatitis in this manner:

Eczema is . . . a catarrhal inflammation of the skin originating without visible external irritation and characterized in some stage of its evolution by serous exudation. . . . The definition of eczema here given excludes all forms of inflammation of the skin caused by chemical or mechanical irritants. The artificial dermatitis set up by such agents is identical anatomically with the eczematous process, and gives rise to lesions indistinguishable from those of eczema, but it is not eczema.

It may be said here that this contention with regard to eczema and dermatitis has the widest prevalence today and is shared by many authorities, including virtually all those in group C. Yet, in effect, this argument as much as says: 1. Eczema plus a known cause is not eczema but dermatitis. 2. Dermatitis plus an unknown cause is not dermatitis but eczema.

Obviously such reasoning is fallacious and self-deceptive, and lays itself wide open to attack.

Highman railed at the sophistry of it; called it evasion; taunted its supporters with "intellectual supineness" and inertia, and charged them with "intellectual diplopia." And Pusey [37] well disposed of this logically untenable position when he said:

The only way that things can be identified in this world by men is by examining their characteristics, which are appreciable directly or indirectly to the five senses. If eczema and dermatitis are identical by all the criteria that man can apply to them, it is a "reductio ad absurdum" to insist that they are different. It is equivalent to saying that things which are the same are different,—which is not according to Euclid.

Nevertheless, in spite of their own apparent lack of accord concerning the various elements comprised therein, the position of the fundamentalists with regard to the sine qua non of a true eczema, its internal origin, though perhaps difficult of positive laboratory or experimental proof in a scientific way, is one that has considerable clinical evidence, although of diverse character, to lend it support. This evidence, albeit mainly of a rather empiric nature, has been amply demonstrated by the relatively recent work of such writers as McGlasson,[38] Haldin-Davis and

36. Morris, Sir Malcolm: Diseases of the Skin, ed. 4, London, Cassell & Company, 1908, p. 252.

37. Pusey, W. A.: Our Changing Knowledge of Eczema, Pennsylvania M. J. **32**:130 (Dec.) 1928.

38. McGlasson, I. L.: Hyperglycemia as an Etiologic Factor in Certain Dermatoses, Arch. Dermat. & Syph. **8**:665 (Nov.) 1923; Hyperglycemia: Its Therapeutic Application in Certain Dermatoses, ibid. **13**:338 (March) 1926.

Wills,[39] Campbell and Burgess,[40] Usher and Rabinowitch, [41], Usher,[42] Johnston,[43] Schamberg and Brown,[44] Michael,[45] Strickler,[46] Beinhauer,[47] Burgess,[48] Ravitch and Steinberg,[49] Barney,[50] Klauder and Brown,[51]

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39. Haldin-Davis, H., and Wills, L.: Abnormalities of Blood Sugar Content in Eczema, Brit. J. Dermat. **37**:364 (Aug. and Sept.) 1925.

40. Campbell, G. G., and Burgess, J. F.: Intolerance to Sugar as a Factor in the Production of Some Dermatoses, Brit. J. Dermat. **39**:187 (May) 1927.

41. Usher, B., and Rabinowitch, I. M.: Excretion of Sugar in Sweat, Arch. Dermat. & Syph. **16**:706 (Dec.) 1927. ("A causal relationship between the excretion of sugar in sweat and eczema is suggested.")

42. Usher, B.: The Relation of Carbohydrate Metabolism to Eczema, Arch. Dermat. & Syph. **18**:423 (Sept.) 1928.

43. Johnston, J. C.: Speculations as to the Causation of Eczema, J. Cutan. Dis. **31**:3 (Jan.) 1913. ("The causation of eczema may be narrowed down to a derangement of the nitrogen metabolism . . . occurring where for the moment biochemistry cannot demonstrate it. Perhaps the fault lies in a failure of protein-splitting in the intestinal wall or the blood stream before the tissues select their store of amino-acid nitrogen.")

44. Schamberg, Jay F., and Brown, H.: A Study of the Blood Uric Acid in Diseases of the Skin, with Particular Reference to Eczema and Pruritus: Based on an Analysis of the Blood of 280 Patients, Arch. Dermat. & Syph. **8**:801 (Dec.) 1923. ("Excessive uric acid values were found chiefly in Eczema and Pruritus . . ."); The Chemistry of the Blood in Diseases of the Skin: A Study of Eight Hundred and Seventy-Five Private Cases, ibid. **21**:1 (Jan.) 1930. (A perceptibly higher percentage of patients with an excess of nonprotein nitrogen, urea nitrogen and uric acid were found in eczema and in pruritus, particularly of the generalized type, than in other dermatoses.)

45. Michael, J. C.: Critical Investigation of the Relation of the End Products of Protein Metabolism to Eczema and Kindred Disorders, Arch. Dermat. & Syph. **14**:294 (Sept.) 1926. Michael, J. C., and Nicholas, H. O.: The Behavior of Injected Uric Acid in Patients with Eczema, Arch. Dermat. & Syph. **14**:308 (Sept.) 1926. ("Uric Acid, Urea and Creatinine are not dermal irritants. . . . Blood estimations of uric acid in eczema and kindred disorders are of doubtful value as evidence of a uratic pathogenesis of some cases of these diseases. Increasing the uric acid content of the blood by [intravenous] injections of lithium urate produced no change in four cases and definite improvement in one case.")

46. Strickler, A.: Anaphylactic Food Reactions in Skin Diseases, with Special Reference to Eczema, New York M. J. **104**:198 (July 29) 1916.

47. Beinhauer, L. G.: Predisposing Factors of Eczema, Arch. Dermat. & Syph. **16**:12 (July) 1927. (Every one of a series of 114 cases of eczema of unknown origin ["true eczemas"?] revealed definite constitutional disease. Only 27 [23.6 per cent] of a control series of 114 cases of various dermatoses other than eczema revealed definite constitutional disease.)

48. Burgess, J. Fred: Endogenous Irritants as Factors in Eczema and Other Dermatoses, Arch. Dermat. & Syph. **16**:131 (Aug.) 1927. Eighteen [16.6 per cent] of 109 consecutive cases of eczema showed positive skin reactions to various intestinal toxins. Only two of 102 noneczematous patients gave positive responses to similar tests.)

Visher [52] and Sidlick,[53] to mention only a few of those who have shed some light on the various angles of this problem, revealing facts far too weighty and significant to be overlooked or ignored.

GROUP B (RADICALS; ECZEMA ATHEISTS)

Members of this group, under the leadership of such European authorities as Jadassohn in Breslau, Riecke in Leipzig and Pinkus in Berlin, and of Bruno Bloch in Switzerland, Norman Walker in Scotland, and Whitfield in England, and of Engman, Highman, Pusey and others in this country, because of their radical dissension from the orthodox point of view on eczema, have been accused of dermatologic heresy, a charge which, however, holds no terrors for them. To some of these nonconformists like Walker, for example, the very word "eczema" is anathema; it makes them see red and constitutes a challenge to battle which they rarely fail to accept.

These men reject eczema as a true clinical entity, utterly, completely and uncompromisingly, basing their rejection on the following argument: Eczema as eczema has no cause for being, because it has nothing about it that should make it a distinctive, substantive disease. They insist that it is merely a pathologic process; that this pathologic process is simple inflammation of the skin or dermatitis, such as may be provoked by any number and variety of irritants, and that eczema is first, last and all the time nothing more nor less than simple dermatitis regardless of whether it is of known or unknown, exogenous or endogenous etiology.

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49. Ravitch, M. L., and Steinberg, S. A.: The Metabolic Influence of the Chlorides on Certain Dermatoses, J. Cutan. Dis. **33**:367 and 466, 1915. ("True eczema [is] a product of multiple etiologic factors of metabolistic nature, and among them the chloride metabolism finds its place.")

50. Barney, Robert E.: Chemical Analysis of Sweat, J. A. M. A. **85**:1373 (Oct. 31) 1925; **87**:1827 (Nov. 27) 1926. (A possible relationship is suggested between senile eczemas and the excretion of nitrogenous elements in the sweat; a diminution in the output of chlorides also was noted.)

51. Klauder, J. V., and Brown, H.: Experimental Studies in Eczema. 1. Study of the Sensibility of the Skin of Rabbits to Chemical Irritants Under Experimentally Induced Conditions, Arch. Dermat. & Syph. **11**:283 (March) 1925; A Correlation of the Chemistry with the Irritability of the Skin of Animals Under Normal and Under Experimentally Induced Conditions, ibid. **15**:1 (Jan.) 1927; The Rôle of the Sympathetic Nervous System and Calcium-Potassium Ratio in Altering Cutaneous Irritability in the Rabbit, ibid. **19**:52 (Jan.) 1929; A Correlation of Potassium-Calcium Ratio in the Serum and in the Skin of Rabbits with the Irritability of the Skin, ibid. **20**:326 (Sept.) 1929.

52. Visher, J. W.: The Rôle of Focal Infections in the Etiology of Eczema, Am. J. M. Sc. **170**:723 (Nov.) 1925.

53. Sidlick, D. M.: The Etiologic Relationship of Tonsillar Focal Infection to Eczema in Children, M. J. & Rec. **128**:344 (Oct. 3) 1928.

Briefly, the argument of members of group B relative to eczema and dermatitis, applying the previously mentioned postulates to each, is as follows:

Clinical Morphology.—There is no lesion of eczema the clinical counterpart of which cannot be produced by the action of some external irritant. Such being the case, one cannot, from external appearances alone say that any given lesion is eczema and not dermatitis.

Course.—Eczema runs a variable and indefinite course. Furthermore, the course of eczema, whether it is acute, subacute, chronic or relapsing, depends on the provocative irritant, removal of which, if and when found, is usually sufficient to cause a disappearance of the eczema. In this sense, too, eczema is not different from dermatitis.

Associated Symptoms.—Itching, tingling, burning, etc., are symptoms on which eczema has no monopoly. They may accompany the inflammatory lesions caused by the action of innumerable external irritants. It is impossible, therefore, to differentiate eczema from dermatitis on the basis of subjective symptoms (constitutional, as well as local).

Distribution.—Eczema may be localized or generalized; so may dermatitis. There is no location on the body surface which is immune to eczema and susceptible to dermatitis, or vice versa. Obviously, then, location can be neither a characteristic of one or the other, nor a point of differentiation between the two.

Pathology.—That the gross clinical pathology of eczema and dermatitis is the same is almost universally conceded, except by Samberger and a few others. And as between the histopathologic picture of lesions of similar intensity of so-called dermatitis or eczema, there are few, if any, authorities, however, who would care to be dogmatic about them.

Etiology.—Whether eczema or dermatitis is, respectively, solely of endogenous or of exogenous etiology is, to group B, more or less a matter of indifference. The end-result in either case, they insist, is a morbid picture that is indistinguishable one from the other, and, as a matter of fact, is dependent on the interplay of both exogenous and endogenous factors on a prepared or susceptible skin.

This concept of the etiology of eczema represents the final recognition and correlation into one coherent whole of the various factors that have been found to play a rôle, each in its own way, in the pathogenesis of eczema. It is comprehensive. It envelops the constitutional doctrine of the internists as well as the externist doctrines of Hebra and his successors (permitting even the inclusion of both the now discredited theory of Unna [54] relative to the bacterial [morococcus]

54. Unna, P. G.: Origine parasitaire des eczemas, Tr. Sect. Dermat. & Syph. Thirteenth International M. Congress, Paris, 1900, p. 9.

origin of eczema as well as the theory maintained by Fordyce [55] and still supported by Prochazka [56] and others that eczema, especially the more acute weeping varieties, may be due to toxins liberated by pyogenic organisms), and it also gives due recognition to the rôle played by predisposition.

It has taken a long time for the latter element to come into its own. Though from his definition of eczema it can readily be seen that Willan himself had recognized predisposition as a factor, it was Biett, Cazenave and Schedel [57] who, in 1838, first maintained the illuminating point of view that "regardless of whether eczema originated from within or without, predisposition was the salient factor." Bazin [57] reemphasized this view when he referred to eczema as a "special reaction to diverse causes," and it was Besnier [43] who stated that "Different people are not equal before eczema," and who pointed out the causative probability of general and local predisposition, and among the latter, particularly other skin diseases and physiologic and anatomic disturbances of the skin.[58] Then came the work of Richet, in 1909, on anaphylaxis, to be followed by a perfect avalanche of views on susceptibility, hypersusceptibility, idiosyncrasy, allergy, hyperallergy, atopy, etc., the sum and substance of which, in a broad sense, is that a subject must have a predisposition, congenital or acquired, to eczema.

It might be well to digress here for a moment to remark that it is perhaps just as true that allergy, in its broad sense, is likewise a factor in virtually all forms of dermatitis other than eczema. It is therefore

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55. Fordyce, J. A.: The Modern Conception of Eczema, J. A. M. A. **40**:1621 (June 13) 1903. (This paper was written "to combat the generally prevailing impression among the profession that eczema is necessarily due to constitutional causes." The author emphasizes the rôle played by local irritants and inclines to the belief that the vesicular type of eczema, because of the sterile contents of its vesicles, may be due to a staphylococcic toxin.)

56. Prochazka, Karel: Streptococcus—An Etiological Factor in Pemphigus Vulgaris and Eczema, Acta derm.-venereol. **9**:346, 1928; abstr. in Brit. J. Dermat. **41**:336 (Sept.) 1929. (Suggests that a streptococcal toxin may be a possible etiologic factor in some acute and more markedly weeping cases, basing his suggestion on positive complement fixation tests and the beneficial effect of streptococcus vaccines.)

57. Highman, W. J.: The Pathogenesis of Dermatitis, Including Eczema, Arch. Dermat. & Syph. **9**:347 (March) 1924; Eczema and Dermatitis, ibid. **11**: 307 (March) 1925.

58. Fox, Tilbury: Diseases of the Skin, New York, William Wood & Company, 1879, p. 182. ("Speaking in broad terms, the cause of Eczema is multiple . . . but I look more particularly for the origin of Eczema in the skin itself.") McKenna, R. W.: Diseases of the Skin, Baltimore, Williams & Wilkins, 1927, p. 284. ("The most important factor [in the cause of eczema] is the part played by the skin itself.") In his Clinics at the Skin and Cancer and the Samaritan Hospitals in Philadelphia, Albert Strickler has repeatedly demonstrated the close relationship between peculiarities of the skin itself and superimposed eczemas.

necessary to use the term with a considerable amount of circumspection and restraint. Thus, merely to say that a given condition is an allergic dermatitis or eczema, without endeavoring to determine and specify the antigenic or provocative factor or factors involved, is, in a clinical sense, entirely unsatisfactory, inadequate and meaningless.

So one finds that endogenous irritants are admitted as factors that play an underlying or predisposing rôle, exogenous factors obviously playing the rôle of precipitating agents (although it is not denied by the members of group B that such agents may arise also from within the body and even from within the skin itself); while predisposition, both from the local and from the constitutional point of view of allergy and its allied phenomena, comprises the third angle of the triangle on which the pathogenesis of eczema or dermatitis is dependent for completion. Or, in other words, as Bruno Bloch aptly put it: "Eczema develops when the skin comes in contact with an eczematogenous substance to which it is sensitive."

To summarize, then, the members of group B hold that eczema and dermatitis, since they may clinically exhibit a uniform morphologic syndrome, run a similar course, present like subjective symptoms, attack the same body surfaces, have an identical pathologic picture, and be provoked by endogenous or exogenous irritants, or both, are not and cannot be two separate and distinct conditions but, being identical in all of the foregoing respects, are therefore identical with each other and must be one and the same condition. They therefore insist that eczema and dermatitis must be considered as synonymous terms, and hold that, of the two, the former should be rejected because its use is and has been both misleading and confusing.

"Eczema," said Walker[59] with fine scorn, "is a name which is a cloak of ignorance. By using in its stead the word dermatitis (without any adjective), we admit our ignorance and constantly remind ourselves of the necessity of searching out the cause of the inflammation."

Furthermore, forcefully argued Highman,[60] much in the same vein:

> Words produce unconscious biases, and eczema has for so long been regarded as an enigma while dermatitis has not, that half the battle in obscure cases would be not to think of them as eczema, but as dermatitis. Call a skin affection eczema, and at once a barrier arises to the solution of its genesis. Call it dermatitis and the barrier seems flimsier.

And again, dermopathologists like Weidman,[61] for example, objecting to the reservation by group A of the use of the term eczema for

59. Walker, Sir Norman: An Introduction to Dermatology, ed. 8, New York, William Wood & Company, 1925, p. 104.

60. Highman (footnote 57, first reference, p. 351).

61. Weidman, F. D., in discussion on Corson, E. F.: The Etiology of Eczema, Atlantic M. J. **29**:849 (Sept.) 1926.

conditions the result only of internal irritants, protest that the term dermatitis should apply equally to all cutaneous lesions the result of the action of irritants, whether internal or external, "for it is contrary to basic pathologic principles to restrict the suffix 'itis' only to a state which is induced by some particular class of irritants."

GROUP C (LIBERALS; ECZEMA AGNOSTICS)

Members of this, the largest of the three groups, included among whom are most of the authors of modern textbooks on dermatology, occupy a middle position between groups A and B. It would seem, too, that though they are fully aware of the unsatisfactory situation that exists with reference to eczema, they are nevertheless, rather desirous of maintaining the relative peace and order, such as it is, of the status quo of this situation. For liberal and progressive though they are, they are not radically minded enough to accept the modernistic "heresy" of group B in its entirety, though many evince a pronounced leaning in that direction; nor are they willing to subscribe unreservedly to the tenets of the fundamentalist conception of eczema.

Perhaps it is that heritage, tradition and constant usage are after all factors too great and powerful for mere logic to cope with. Dermatology may be both an art and a science, but eczema, verily, is a religion in dermatology. Attack or belittle eczema as one may for its obvious inadequacies and fallacies, it nevertheless will continue to number among its more or less faithful adherents some who will accept it and its orthodox doctrines without question or change, and others who will acknowledge allegiance to it, subject, however, to various modifications in dogma and ritual, in a manner akin to that of adherents of the reformed versus the orthodox churches.

And so one finds the members of group C tactfully agreeing with those of Group A, on the one hand, that eczema is a true clinical entity, and, on the other hand, with those of group B that it is not. The fact of the matter is, they stoutly assert, in defense of their attitude, that eczema both is and is not a true clinical entity, for the following reasons: First, time has hallowed it as such. Second, so far as the essential point of disagreement with reference to etiology is concerned, group C holds that eczema may be endogenous in origin, thus agreeing with the fundamentalists, and also that it may be exogenous or both endogenous and exogenous in origin, thus agreeing with the radicals. Third, so far as the relationship of eczema to dermatitis is concerned, they hold that it both is and is not identical with it; some profess to see various shades of difference between the conditions, as do the fundamentalists, while others, though more or less reluctantly admitting the contention of the modernists regarding the identity of eczema with dermatitis, prefer to accept the conservative, even though none too logical,

view of Malcolm Morris, namely, that the use of the term dermatitis should be restricted to conditions of known external etiology (dermatitis arteficialis eczematosa) and the term eczema (i. e., true eczema) to conditions of undiscovered origin.

In the latter respect, the opinion of Ormsby [62] which is shared by an imposing array of modern authors including Knowles,[63] Sutton,[64] Schamberg,[65] Strickler,[66] Sequiera,[67] McKenna,[68] McEwen,[69] Hartzell,[70] Schalek,[71] and Stelwagon and Gaskill,[72] may be quoted as being typical of that of the members of group C as a whole:

> A vexed and unsettled question among dermatologists is the relation of eczema to other forms of dermatitis. In its historical evolution many separate and distinct diseases have been grouped under this title. The present tendency is to exclude, as rapidly as possible, all forms of dermatitis which have a definite cause, and which, upon removal of this cause, disappear. Eczema is a dermatitis and it is not possible to say in every case which title is the more appropriate. A convenient division classes under dermatitis those forms of involvement of the skin which result from recognized external causes and which subside upon removal of the cause.

From all this it may be gathered that members of group C are indeed in a quandary about the whole matter. There is a certain hesitancy on their part to say boldly and unreservedly that eczema is a true clinical entity (for they cannot consistently call it such while at the same time terming it a "dermatological scrap-heap," "waste basket," "pigeon-hole," etc.), and yet they are as reluctant to commit themselves to the unequivocal statement that it is not a true clinical entity. Furthermore, though they admit that eczema is a dermatitis, they seem almost to stand aghast at the "heretical" suggestion that eczema and simple dermatitis are at all times identical, rather than merely similar. Eczema is dermatitis, and simple inflammation of the skin is, per se, simple dermatitis, but any idea that eczema and simple dermatitis are always identical seems to be regarded by them as the radical and revolu-

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62. Ormsby (footnote 16, p. 221).

63. Knowles (footnote 10, p. 145).

64. Sutton (footnote 14, pp. 266 and 270).

65. Schamberg (footnote 8, p. 62).

66. Strickler, A.: Diseases of the Skin and Syphilis, Philadelphia, F. A. Davis Company, 1927, p. 66.

67. Sequiera, J. H.: Diseases of the Skin, ed. 4, London, J. & A. Churchill, 1927, p. 112.

68. McKenna (footnote 58, second reference, p. 290).

69. McEwen, E. L.: Trends and Developments in the Field of Dermatology, Am. Med. **23**:307 (May) 1928.

70. Hartzell (footnote 9, p. 132).

71. Schalek, Alfred: Fundamentals of Dermatology, Philadelphia, Lea & Febiger, 1926, p. 92.

72. Stelwagon and Gaskill (footnote 13, p. 288).

tionary conception of rabid dermatologic iconoclasts, and is either ignored or combated with arguments that are sentimental or partake of the nature of hair-splitting and equivocation.

However, this much must also be said, that "vexed and unsettled" though they may be as regards eczema and dermatitis, the members of group C today have virtually accepted in full the views largely developed by group B in regard to etiology, although until recent years the opinion that Hartzell expressed in 1913 in a discussion on eczema was perhaps most typical of that of group C. "We did not learn a single fact in the past century," said Hartzell,[73] "bearing upon the internal causes of eczema, while on the other hand much had been learned about the external causes"; yet he did not want to go on record utterly denying the possibility of an internal causation. Hartzell, in other words, played safe, and this was likewise the policy of the members of group C, who, while skeptically conceding the possibility of an eczema due solely to some endogenous factor, nevertheless qualified this concession with demands for scientific proof thereof, while adhering to the exogenous theory of causation.

Attempts almost without number have been made to provide such proof, especially with reference to the quantitative determinations of the various constituents of the blood, urine, and sweat, such as urea, uric acid, sugar, potassium, calcium, chlorides, etc. (references 38 to 51).

An appraisal of the results of these efforts, however, caused Bloch [32] recently to assert:

> If one compares the numerous investigations which have been made for this purpose in many countries, the results of which have been published in many different languages, one can arrive at only one conclusion, namely, that up to the present time complete failure has resulted. . . . There is not the least evidence of the existence of a metabolic disturbance which is common to all or to many types of eczema, and which is pathognomonic for this condition of the skin. Viewed from the standpoint of physiologic chemistry, eczema is not a metabolic disease.

Yet though the foregoing statement seems categorical enough, Bloch, like Hartzell, took care not to burn all his bridges behind him, for he went on to say that "whether there are endogenous as well as exogenous causes of eczema still remains a question which, I believe, must be answered in the affirmative," and he even conceded the possibility that "abnormal (or even normal) metabolic and hormonal products may play a part in the genesis of eczema."

So much, then, for the conservative or fundamentalist, the radical or atheistic and the liberal or agnostic views on eczema of groups A, B and C, respectively, the foregoing elaboration of which I hope has

73. Hartzell, M. B., in discussion on Johnston, J. C., and Knowles, F. C.: Eczema, J. Cutan. Dis. **31**:30 (Jan.) 1913.

served to show that the subject of eczema, though perhaps mystifying, is not mysterious.

SOLUTION

Concerning eczema as it is today, one sees that there are both facts and theories to contend with. Eczema itself is a fact, for here it is "as large as life and twice as natural," and from past as well as present indications, one is probably justified in assuming that eczema, like the poor, is always going to be with us. In this connection, I may repeat the observation made before, that dermatology may be both an art and a science, but eczema, verily, is a religion in dermatology. But established religions, says history today to the Soviet authorities, are not going to be wiped out, certainly not by mere fiat and probably not by any other means either, a lesson to which dermatologists also may well pay heed.

However, just exactly what eczema connotes and just what its relationship is to other dermatoses in general, to dermatitis in particular, and still more particularly, to itself, have not always been clearly defined nor differentiated, resulting in the confusion and speculation without end that have always been found associated with it. It has taken about a century and a half of careful observation, theorization and investigation, equivalent to the four periods covering the modern development of dermatology, to bring dermatologists to their present state of knowledge on the subject, a state not without confusion, yet one to which I believe a satisfactory and acceptable solution has been offered.

For this solution I shall now revert back to the theme of the first paragraph of this paper. The word eczema may, as Hyde intimated, some day be relegated to the dictionary of obsolete terms. I am compelled to remark, however, that that day, like the millenium—dermatologic or otherwise—though perhaps a bit nearer, is yet no doubt very, very far off,—a probability in the philosophic though helpless contemplation of which even the "heretical" Highman, for the sake of witnessing a universal and mutual understanding among dermatologists on this subject of eczema, becomes reconciled to the idea of effecting a compromise, If I may take the liberty to paraphrase his thought on the matter he capitulated thus:

> Call it eczema if you will, although I would prefer, of course, to have that term discarded for simple dermatitis. However, if you insist on calling it eczema, then so be it; but, on one condition—that when you speak of eczema, then be it understood that you are thinking of a condition none other than simple dermatitis, regardless whether its etiology be known or unknown, endogenous or exogenous or both.

It is, in conclusion, in this sense and in this sense only that the term eczema should survive, as survive it will anyhow, but with the incalcu-

lable advantage, however, of a common understanding as to its connotation and genesis.

Otherwise a diagnosis of eczema must be considered as meaningless and as indefinite and vague as that of dyspepsia. Indeed, I suggest that eczema is to the skin as dyspepsia is to the stomach, and that the phrase "dyspepsia of the skin" be considered as synonymous with the term eczema. But that is another story,[74] and if this paper has helped to clarify the subject of eczema to some of its readers, its purpose will have been fulfilled.

877 North Sixth Street.

74. Friedman, Reuben: Eczema, Dyspepsia of the Skin, to be published.

EAR PHONE DERMATITIS

REPORT OF A CASE *

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The following report concerns a case of ear phone dermatitis met with in private practice.

Mr. L. K. M., aged 47, was referred on November 21 by Dr. E. V. Denneen of New York. The patient presented a dermatitis of the lateral aspect of both ears which also involved the skin just anterior to the ears. The history was that on October 30 the patient used radio ear phones for two hours. The following morning the ears itched and burned and became slightly swollen. The itching and burning continued for two weeks, and the swelling gradually increased. On November 15, both ears were about twice the normal size, and the skin was tense. Then, for the first time, the patient consulted a physician, who prescribed a calamine lotion. With this treatment, the swelling greatly subsided in a few days, but the erythema, itching and burning continued. On November 21, when I first saw the patient, he presented a moderate erythema with slight scaling of the lateral portions of both auricles and the adjacent skin. He complained of itching and burning. The erythema and itching gradually subsided with soothing applications, but at the time of writing, had not entirely disappeared. The ear phones used by this patient were made of a laconite compound.

Dr. M. B. Sulzberger made contact skin tests with crushed particles from one of the ear phones. These were applied to the patient's back for twenty-four hours. He complained of some itching, but no erythema was observed on several daily observations. The test was therefore considered negative. The other phone was bandaged to the patient's forearm for twenty-four hours, with negative results. Likewise, negative results were obtained on the forearm of another person used as a control.

In the two cases of ear phone dermatitis reported by Oelze,[1] the dermatitis persisted for some time and spread beyond the points of immediate application with all the characteristics of an acute dermatitis. Kissmeyer [2] and Stein [3] believed that the cause in several cases was to be found in the varnish, which contained a high percentage of tar. Thompson [4] reported the occurrence of cases in telegraph and telephone employees.

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* Submitted for publication, Jan. 15, 1930.

1. Oelze, F. W.: Radio Dermatitis, Dermat. Wchnschr. **79**:997 (Aug. 30) 1924.

2. Kissmeyer: Arch. f. Dermat. u. Syph. **140**:357, 1922.

3. Stein: Wien. klin. Wchnschr. **37**:1069 (Oct. 9) 1924.

4. Thompson: Occupation and Health, Geneva, Brochure 60, International Labour Office, 1926.

In my case, the itching, burning, erythema and edema were present for three weeks, and slight redness and itching were present at the end of five weeks. Although the skin tests were negative, I believe this patient had a genuine ear phone dermatitis with a localized sensitivity. This might be true in spite of the negative tests, owing either to phenomena of local sensitization or to those of desensitization. Corroboration of this might have been obtained by another application of the ear phones to the ears, but the patient refused.

Several cases of ear phone dermatitis have been reported in the European literature, and cases have been known to occur in this country. Ear phones are of two compositions: one is a phenolic compound similar to Bakelite; the other is made of laconite compound which is a mixture of pure T.N. shellac, rosin, fossel gum (copal) mica filler, marble dust and carbon black.

The manufacturers informed me that they had seen one case of dermatitis develop from the use of the laconite compound ear phones and two cases from the phenolic compound ear phones.

100 West Fifty-Ninth Street.

RHINOPHYMA WITH CARCINOMATOUS DEGENERATION

REPORT OF A CASE *

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Rhinophyma is usually a benign sequel of acne rosacea, causing no trouble other than cosmetic defect. In rare instances, the tumor becomes infected and ulceration takes place. No other serious complications have been reported in the literature. Wende and Bentz [1] reported a case in which there were five separate tumors in the same patient. One of these had ulcerated, and a microscopic section showed a basal layer which, as the author stated, "had a suspicious look, resembling carcinoma." This is the only case reported in which there was a suggestion of carcinomatous degeneration in rhinophyma. For this reason, it is of interest to report the following case:

REPORT OF CASE

History.—W. W., American, aged 76, entered the University Hospital on May 20, 1929, because of a lesion on the nose. Until recently, his occupation had been that of a blacksmith. His habits were regular and normal. For many years, he had drunk whisky moderately, but for the last few years he had not used alcohol in any form. The family history showed a definite cancerous tendency. The maternal grandfather, one brother and one son died of carcinoma of the stomach. A maternal aunt died of carcinoma of the lip. There was no history of a condition similar to his in the family. The marital history was unimportant.

The patient's general health had always been good. For the past ten years, he had noticed slight varicosities, but these had not given him any trouble. In the last four or five years, he had had a slight swelling of the ankles on standing. Associated with this there had been some shortness of breath on exertion, and pain in the chest. None of these symptoms had recently become more pronounced.

He stated that he had always had a very oily skin. When young he had a great many inflammatory papules on his face and back. For a great number of years, there had been red blotches on his face. As long as the patient could remember, his nose had been red and the blood vessels around it dilated. It was apparently of normal size until eighteen months before his admission to the hospital. At that time he pinched several large comedones, and the nose began

* Submitted for publication, Jan. 21, 1930.

* From the Department of Dermatology and Syphilology of the University of Michigan Medical School, service of Dr. Udo J. Wile.

1. Wende, G. W., and Bentz, C. A.: Rhinophyma, J. Cutan. Dis. **22**:447 (Oct.) 1904.

to increase rapidly in size, attaining the size of a small apple in two months. Six months later he noticed a small papule on the left side of the tumesence, which he frequently picked at. This finally ulcerated, and a considerable amount of purulent material exuded. The tumor then became smaller. Since then the ulcer had not healed, but had become slightly larger and deeper. It had been entirely painless and asymptomatic, except that on extreme manipulation there had been slight bleeding. Recently, two smaller similar ulcers had appeared on the side of the involved area. Local medication had produced no effect toward healing the condition.

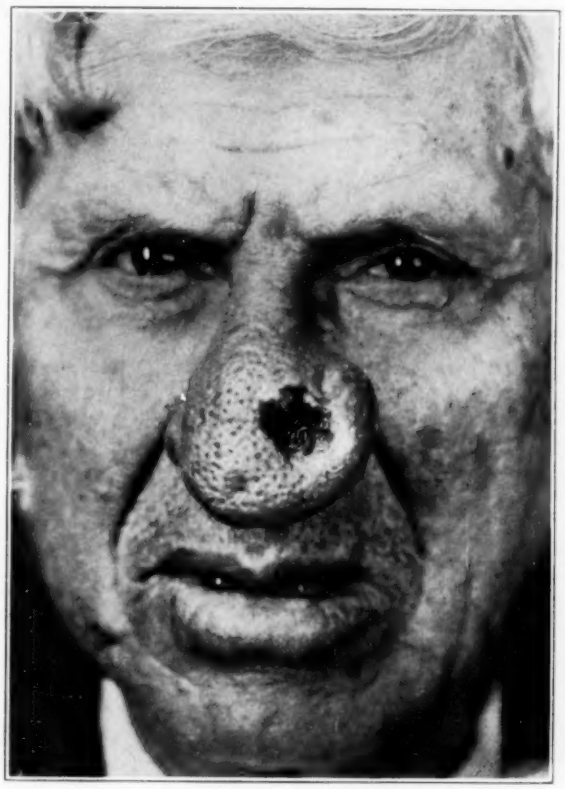

Fig. 1.—Rhinophyma with malignant degeneration.

Examination.—Results of the general examination were negative except for a few scattered squeaking râles at the bases of the lungs, and an accentuation of the aortic second sound. As shown in figure 1, the patient presented a bulbous and irregular enlargement involving the distal half of the nose. Superimposed on this, there were several ulcerations, two small ones on the left side varying in size from that of a glass pinhead to that of a pea, and over the central portion a dime-sized crateriform ulcer. The entire process was dull red, with some telangiectasia. There was marked enlargement of the sebaceous duct orifices. Many of these were plugged with comedones. To palpation, the area was painless and had a boggy feel except for the area about the largest ulcer, which was of cartilaginous firmness. The border of the ulcer was slightly undermined, and partially crusted

over with a brownish crust. The base was covered with a yellowish-white purulent exudate.

On the right cheek there was a large bean-sized ulceration which had a serosanguineous crust. To palpation, this was also firm and definitely infiltrated. The regional lymph glands showed no particular enlargement. The clinical diagnosis made at this time was rhinophyma with carcinomatous degeneration. Results of the Kahn test were negative.

A biopsy was performed on May 23, and microscopic section revealed, besides definite rhinophyma and inflammatory changes, typical squamous cell carcinoma,

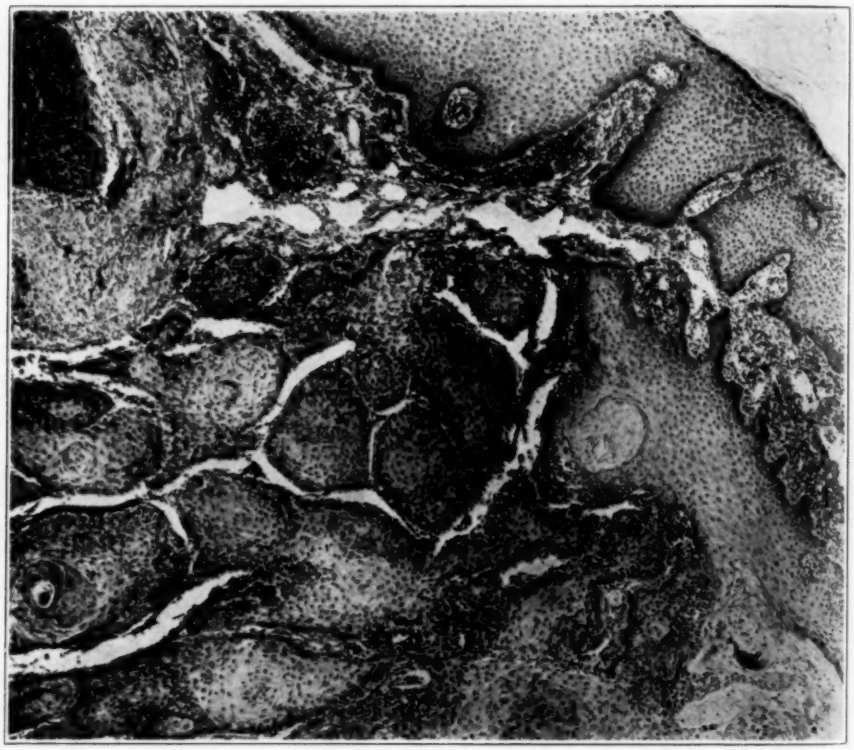

Fig. 2.—Section from biopsy showing squamous cell carcinoma.

as shown in figure 2. It was well advanced, islands of carcinoma being formed deep in the corium. In the center of nearly all the groups of tumor cells were typical epithelial pearls.

Treatment and Course.—The patient was transferred to the otology department for operation. The entire tip, both alae and much of the lateral walls of the nose, including the anterior third of the septum, were removed with the actual cautery, owing to the fact that carcinomatous tissue was found leading from the bridge of the nose into the nostrils. Recovery from this operation was uneventful.

On July 8, 1929, the epithelioma on the right cheek was removed with electrodesiccation. Microscopic section from this growth showed ulceration of the epidermis and a marked inflammatory cellular infiltrate. There was a definite

break in the basal layer, with strands of epithelial cells of the basal type extending into the corium.

The patient was last seen eighty-one days after the operation. Epithelium had formed over the entire site of cauterization, and there was no evidence of recurrence. The epithelioma on the cheek likewise appeared to have been entirely destroyed.

CONCLUSION

Interest in this case is due to the fact that the patient presented a typical rhinophyma in which a squamous cell carcinoma had developed. Malignant degeneration in this condition has not before been reported.

In addition, there was a different type of carcinoma (basal cell) on the cheek at the same time.

LATE CONGENITAL SYPHILIS

REPORT OF A CASE *

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The case to be described seems to be of sufficient interest to justify its publication, chiefly because of the many-sidedness of the syphilitic changes and some peculiar features of the lesions.

REPORT OF CASE

History.—The patient was a girl, aged 18. A history of syphilitic infection of the parents was not obtained. The father had died of an indefinite illness. The mother was entirely free from symptoms; she had had four miscarriages; three children were living. The patient was the youngest of these; the other two, a sister and a brother, were known to have a similar condition. The brother was also brought for examination. During the first four years of life, the patient's health had been good. The first syphilitic manifestation, a parenchymatous keratitis, had started when she was 4 years of age, with the simultaneous appearance of deafness. When she was 10 years old, the first lesions of the skin had occurred in the submaxillary region and on the neck; five years later, lesions of the skin appeared on the right shoulder and the right arm. During the three months prior to admission, the lesions on the face and on the left elbow had been gradually developing. It is uncertain when bone changes began; the mother said that she became aware of the deformity of the knee when the patient was 13 years old. The patient had received no treatment.

Examination.—The patient looked like a girl aged 10. The mentality was definitely retarded. Nutrition was poor. Hutchinson's syndrome was present, with complete bilateral nerve deafness and parenchymatous keratitis.

The skin of the body as a whole was dry and thin, the network of veins showing through on the front of the chest. The skin on the nose, cheeks and upper lip was bluish red, inflamed and covered with thick, brownish crusts, the removal of which revealed a red, excoriated, exuding surface. Along the edge of the inferior maxilla was a linear scar, measuring 7 cm., rugged, hidebound and brownish; below it was another similar one. Numerous scars, pea-sized and larger, were scattered on the front and sides of the neck. On the right shoulder was a palm-sized exuberant area of ulceration, spreading down in an enormous, thin, atrophic, not hidebound, tissue-paper-like scar which extended over the upper two thirds of the arm. A lesion similar to that on the shoulder was present on the extensor face of the left elbow. Over the lower extremity of the right humerus was a circular scar, 1.5 cm. in diameter. In the right groin just below Poupart's ligament were a linear and a nummular scar. On the skin of the back there was lichen scrofulosus.

The muscular and osseous systems were weakly developed.

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* From the Dermatological Clinic of the University; Prof. Dr. J. Lenartowicz, chief.

The skull did not show any changes. The nasal bridge was wide and flat, but she did not have a saddle nose. The destruction of the alae nasi was the result of an ulceration. The pharynx showed injection; on the mucosa of the hard palate was the specific infiltration. The teeth were irregular and irregularly set; the lateral upper right incisor was absent, and the central upper incisors were without the characteristic lunar notch. The voice was husky and aphonic; speech was unintelligible. Examination of the larynx revealed the ulcerative process on the epiglottis.

Fig. 1.—Late congenital syphilis in a girl aged 18.

Clinically, the lungs showed no evidence of disease, except adhesions on both sides. Roentgenologic examination revealed a definite increase in the hilar shadows.

The cardiac impulse was felt outside the right nipple line. The pulse was regular and the rate increased to 102 beats a minute.

Palpation showed the liver reaching 4 cm. below the right costal arch. The edge of this organ was smooth. The spleen could not be palpated.

The right upper extremity was without changes. The left olecranon presented an underdevelopment, was freely movable and was joined with the shaft of

the ulna by a pseudo-arthrosis. The processus coronoideus formed an exostosis. There was some limitation of extension, but the other movements were maintained. The roentgenogram showed, apart from the condition discovered by clinical examination, an underdevelopment of the ulna and at the lower end of the humerus an area of rarefaction as the remains of a gumma.

The upper end of the left tibia showed some increase. By movements, a crepitus was produced. Roentgenologic examination showed some increase of translucency of the lower end of the left femur.

Fig. 2.—The left elbow joint showing changes due to congenital syphilis.

The lower right extremity exhibited the most pronounced changes. It was set up in so-called "bayonet" position. The axis of the femur crossed that of the tibia on the tubercle of the tibia. A slight degree of lateral subluxation of the femur resulted from the laxity of the system of ligaments. When the knee was bent, the femur slipped forward and backward on the tibia. This symptom was known to result from the laxity of the crucial ligaments. The function of the knee joint was not disturbed. The right foot was in varus, the left foot in plano valgus position. The roentgenogram showed a dentate and "worm-eaten" appearance in the upper end of the tibia and an irregular proliferation of the periosteum, just below an old fracture, the fragment being displaced to the outer side of the end of the shaft. The epiphyseal line was clear and irregular. In

the lower end of the femur, a clear space was visible as the remains of a gumma. Then, apart from the residua of osteomyelitis gummosa, there were the remains of Wegner's disease with a disturbance of ossification which appeared in the persistence of the epiphyseal line. No active syphilitic lesions were seen.

The examination of the nervous system failed to demonstrate any pathologic changes. The cerebrospinal fluid was also normal, with a negative reaction in the Wassermann test.

Examination of the blood showed: red blood cells, 3,600,000; white blood cells, 14,000; hemoglobin (Sahli), 74 per cent; color index, 1.02. The differential count was: polymorphonuclears, 50 per cent; eosinophils, 4 per cent; lymphocytes, 35.5 per cent; monocytes, 8.5 per cent; plasmocytes, 0.5 per cent, and mast cells, 1.5 per cent.

Fig. 3.—Deformity due to congenital syphilis.

The specific gravity of the urine was 1.015. The quantity of albumin was 3 parts per thousand. In the sediment were large hyaline casts, few small granular casts and red cells. The doubly refractile lipoids were not found. The patient did not show any evidence of edema.

Functional Tests of Kidneys: The result of the water test was as follows: After 1,000 cc. of water (fig. 5) had been drunk, at one hour, the quantity of urine was 277 cc., with a specific gravity of 1.010; at two hours, the quantity was 176 cc., with a specific gravity of 1.005; at three hours, the quantity was 111 cc., with a specific gravity of 1.007, and at four hours, the quantity was 50 cc., with a specific gravity of 1.010.

The iodine output was normal. The methylene blue (methylthionine chloride, U.S.P.) was eliminated during ninety-six hours. The total nonprotein nitrogen in the blood as determined by the method of Kjeldahl was normal. The blood pressure was 115 mm. of mercury.

The results of the functional tests show that there was a mild glomerulonephritis.

The Wassermann reaction of the blood was strongly positive. Then the patient was tested with Busson's luetin and with luetin obtained from sclerotic rabbits inoculated with syphilis. At first, the test was made by scarification analogous to Pirquet's method, and it caused a slightly pinkish-red papule. Both luetins, applied intradermally, were followed by an intensive local and general reaction: collapse, vomiting, a rise in temperature to 38 C. (100.4 F.), a rise of albumin in the urine to 12 per thousand. The local reaction took the form of an inflam-

Fig. 4.—The right knee joint as affected by congenital syphilis.

matory, bright red papule raised above the surface with a small vesicle in the center. In the course of the following days, lymphangitis developed in the right arm, where the test had been made, and the axillary glands were enlarged. Histologic examination of the inflammatory reaction showed a nonspecific granulomatous tissue.

Treatment.—In view of the condition of the kidneys, I could not subject the patient to intensive antisyphilitic treatment. Only neoarsphenamine was given, in doses of 0.15 Gm., bismuth and potassium iodide being completely omitted. The total treatment consisted of 2.7 Gm. of neoarsphenamine. The patient tolerated the drug well. In the course of treatment, the general condition improved con-

siderably, and the ulcerated areas healed rapidly. Immediately following the injection there was a marked decrease in the amount of albumin in the urine, which continued for several days. At the last examinations, it reached constantly 1 per thousand, although the patient was under unrestricted dietary conditions and was walking more than during the first days after her admission. This result of the antisyphilitic treatment and the rise of albumin after the treatment with luetin may be regarded as supporting the belief that there is a syphilitic basis for the renal changes, although such a clinical picture has not been submitted in the literature. The best recognized points in the diagnosis of syphilitic renal changes are: a high albumin content of the urine, doubly refractile lipoids in the sediment

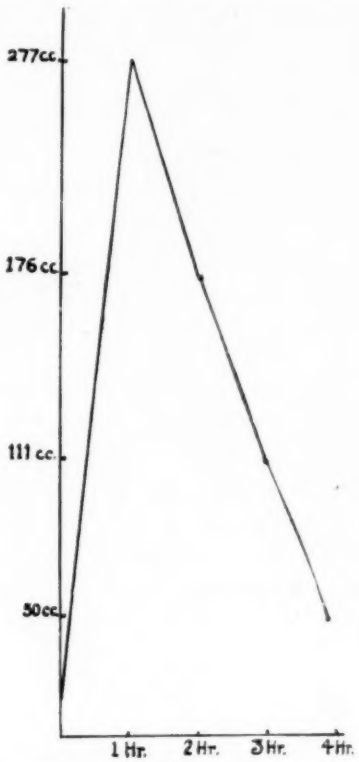

Fig. 5.—Results of water test of kidneys. Vertical scale shows the quantity of urine.

and the therapeutic test. Glomerulonephritis in the form described is usually referable to scarlet fever or diphtheria. However, I am inclined to believe that syphilis should be established as the etiologic factor of the kidney changes in my case.

COMMENT

The interest of this case lies chiefly in the lesions of the bones and joints. Such lesions are so frequent in late hereditary syphilis that some writers (Nicolas, Gaté, Pillon) regard them as stigmas and propose to establish the tetrad instead of the triad of Hutchinson. Some observers believe that they are to be met with more frequently than

Hutchinsonian teeth. Generally, in a cursory survey of the literature, it is to be noticed that the dental stigma of Hutchinson does not appear to have the importance that is generally attributed to it. This stigma was also absent in my case. According to ophthalmologists, there is a marked connection between parenchymatous keratitis and changes in the joints.

The congenital syphilitic lesions of the bones and joints may be classified as follows:

1. Bony changes: There are five forms, the first three of which are frequent: (*a*) osteochondritis, (*b*) periostitis and (*c*) osteomyelitis gummosa. The two other forms are rare: (*d*) osteomyelitis fibrosa rareficans (Pick's osteoporosis hypertrophica) and (*e*) overgrowth of the long bones caused by the degeneration of the epiphyseal cartilage.

2. Arthropathies: (*a*) arthritis suppurative, and (*b*) polyarthritis serosa.

3. Ostearthritis.

In the foregoing case, one deals exclusively with lesions of bone without considering the secondary synovitis.

SUMMARY

In the case described, the following points of interest may be summarized: The bone lesions were uncommonly generalized. As remains of gummas, one encountered only rarefication of bone tissue without destruction and ulceration. The changes in the left elbow joint were unique and hitherto undescribed. Moreover, the syphilitic glomerulonephritis which occurred in my case is not usually seen and so far as I know has never hitherto been described.

PAGET'S DISEASE OF THE MALE NIPPLE AND AREOLA *

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In 1874, Sir James Paget [1] described certain chronic diseases of the skin of the nipple and areola which were succeeded by the formation of scirrhous carcinoma in the mammary gland. He had observed fifteen cases, all in women, from 40 to 60 years or more of age, in whom the disease had begun as an eruption on the nipple and areola. His concise description, which was only a clinical one, holds true today. The lesions were described as beginning like, and having practically all the characteristics of, acute eczema. He had never seen the eruption extend beyond the areola, and only once had he seen it pass into deeper ulceration of the skin after the manner of a rodent ulcer. In some of the cases, the eruption presented the characteristics of ordinary eczema, with minute vesicles, succeeded by soft, moist, yellowish scabs or scales and constant viscid exudation. In some of the cases, it was like psoriasis: dry, with a few white, slowly desquamating scales. In both forms, especially the form resembling psoriasis, he had seen the eruption spread far beyond the areola, in widening circles, or with scattered blotches of redness, covering nearly the whole breast.

In every case observed by Paget, carcinoma of the mammary gland had developed within two years and occasionally within one year after the onset of the eruption. The formation of carcinoma had not in any case taken place first in the diseased part of the skin. It had always been in the substance of the mammary gland, beneath or not far from the diseased skin, and always with a clear interval of apparently healthy tissue. Clinically, the carcinoma resembled ordinary carcinoma of the breast, pursued an average course, recurred when removed, involved adjacent lymph glands and metastasized. He advised early and complete removal or destruction.

Since then, this condition has been the subject of considerable controversy, although the disease is of rather infrequent occurrence. It is probable that the interest shown in the disease lies in the fact that hope has been stimulated, from time to time, that in its study may be found

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* Abridgment of thesis submitted to the Faculty of the Graduate School of the University of Minnesota in partial fulfilment of the requirements for the degree of Master of Science in Dermatology and Syphilology, March, 1929.

1. Paget, James: Disease of the Mammary Areola Preceding Cancer of the Mammary Gland, St. Barth. Hosp. Rep. **10**:87, 1874.

a solution to the problem of carcinoma. Since Paget's description, numerous similar cases have been reported in the female, but few reports have been made of its occurrence in the nipple and areola of the male.

Deaver and McFarland,[2] and Fitzwilliams [3] referred to a case in a male patient reported by Gintrac and Gintrac [4] in 1856. Forrest,[5] in 1880, made the first clinical report of Paget's disease in the nipple and areola of a male patient, associated with carcinoma of the breast and lymphatic metastasis. Elbogen,[6] in 1908, observed a clinically typical case in a man, aged 48, with the occurrence of metastatic nodules both under the skin of the breast and in the corresponding axilla. About seven months after radical amputation had been performed, enlargement of lymph nodes appeared in the supraclavicular fossa, associated with pulmonary symptoms and a marked degree of debility. The patient died shortly afterward. The histologic picture of the tumor removed at operation was adenocarcinoma of the breast, and in the epidermis were found the so-called Paget cells. Jonas,[7] in 1910, reported a case in a male patient in whom the nipples and areolae of both breasts were involved. The histopathologic studies revealed carcinoma of both breasts.

Gaucher and Bricout,[8] in 1912, reported a case of Paget's disease of the nipple in a male patient, with metastasis to the skin and lymphatic involvement. Pathologic data were not available in their case.

Sekiguchi,[9] in 1917, referred to a case in a man, aged 67. The clinical picture was that of ulcerated Paget's disease in the ulcerated stage, involving the nipple and areola, beneath which there was a palpable tumor, about 3 by 5 cm. in its two diameters. Pathologic sections confirmed the clinical diagnosis.

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2. Deaver, J. B., and McFarland, Joseph: The Breast: Its Anomalies, Its Diseases and Their Treatment, Philadelphia, P. Blakiston's Son & Company, 1917, p. 484.

3. Fitzwilliams, D. C. L.: On the Breast, St. Louis, C. V. Mosby Company, 1924, pp. 416-426.

4. Gintrac, M. E., and Gintrac, M. H.: Eczéma du mamélon chez l'homme, J. de méd. de Bordeaux **1**:280, 1856.

5. Forrest, R. W.: Case of Cancer of the Mamma in the Male Preceded by a So-Called Eczema of the Mammary Areola: Paget's Disease of the Nipple, Glasgow M. J. **14**:457, 1880.

6. Elbogen, G. A.: Zur Kenntnis von Paget's Disease of the Nipple, Festschr, Hans Chiari seines 25 jährige Professoren-Jubiläums Gewidmet von seinen Schülern, Leipsic, Wilhelm Braumüller, 1908, pp. 143-156.

7. Jonas, Ernst: Paget's Disease of the Nipple: Report of an Interesting Case, Interstate M. J. **17**:674, 1910.

8. Gaucher and Bricout: Maladie de Paget du mamélon gauche avec noyaux secondaires de la peau et envahissement ganglionaire chez un homme, Bull. Soc. franç. de dermat. et syph. **23**:148, 1912.

9. Sekiguchi, S.: Studies on Paget's Disease of the Nipple and Its Extramammary Occurrence, Ann. Surg. **65**:175, 1917.

Handley [10] commented on a case of Paget's disease in a male patient and stated that there was present an underlying carcinoma of the breast. A microphotograph showed the lymphatic invasion but did not show the "typical Paget cells" in the epidermis or in the ducts.

With such few, scattered reports it is evident that the disease is relatively rare in the male.

In Yoakem's [11] series of 42 cases in which operation was done for various diseases of the nipple and areola, 16 cases in female patients were found to be true examples of Paget's disease with or without secondary associated carcinoma of the breast. The 42 cases were from a series of 2,640 in which operation was performed at the Mayo Clinic for diseases of the nipple and areola, and for malignant neoplasms of the nipple and breast. In 10 of the 16 cases of Paget's disease, carcinoma of the breast was associated; in most of these cases the carcinoma was scirrhous. The opponents of the belief that Paget's disease is a genuine epidermotropic carcinoma argue that the inability to find carcinoma of the breast does not prove its absence.

Judd,[12] in a review of 100 consecutive cases in which there was a discharge from the nipple, found 3 cases of Paget's disease, confirmed by histopathologic study. Judd and Morse [13] came to the conclusion that carcinoma of the male breast is more malignant than carcinoma of the female breast. In their series of 17 cases of carcinoma of the male breast (in none of which Paget's disease was found), malignancy was graded according to the method of Broders; [14] in 8 cases it was graded 4, in 6 cases 3, and in 2 cases 2; in 1 case the tissue had not been preserved. In 13 of the 17 cases there were varying degrees of lymphatic involvement.

Jopson and Speese [15] found 2 cases of Paget's disease in 450 cases of tumor of the breast. In a study of 1,100 cases of carcinoma of the breast, Kilgore [16] found 4 cases in which Paget's disease was associated.

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10. Handley, W. S.: Cancer of the Breast and Its Treatment, ed. 2, New York, Paul B. Hoeber, Inc., 1922, pp. 339-372.

11. Yoakem, H. H.: Paget's Disease of the Nipple and Areola, unpublished thesis.

12. Judd, E. S.: Intracanalicular Papilloma of the Breast, Journal-Lancet **37**:141, 1917.

13. Judd, E. S., and Morse, H. D.: Carcinoma of the Male Breast, Surg. Gynec. Obst. **42**:15, 1926.

14. Broders, A. C.: Carcinoma, Grading and Practical Application, Arch. Path. **2**:376 (Sept.) 1926.

15. Jopson, J. H., and Speese, John: Paget's Disease of the Nipple and Allied Conditions, Ann. Surg. **62**:212, 1915.

16. Kilgore, A. R.: Is Paget's Disease of the Nipple Primary or Secondary to Cancer of the Underlying Breast? Arch. Surg. **3**:324 (Sept.) 1921.

Burns [17] stated that carcinoma of the breast is preceded by Paget's disease of the nipple in about 1 per cent of the cases.

In the Mayo Clinic, between January, 1914, and January, 1928, a clinical diagnosis of Paget's disease of the nipple and areola was made in 49 cases, of which 3 were in male patients. In 21 of these cases the diagnosis was confirmed histopathologically. Unfortunately, in only 1 of the cases in male patients was histopathologic study possible.

REPORT OF CASE

A man, aged 57, came to the Mayo Clinic in January, 1923, complaining chiefly of soreness in the left nipple of about two years' duration. He attributed the soreness to the rubbing of his underclothing. At the onset, the soreness lasted about two weeks, and then gradually disappeared. Several months later the soreness returned, accompanied by itching. Various local measures had been applied without benefit. The patient had not noted any nodules, ulceration or discharge.

Fig. 1.—Paget's disease of the male nipple and areola.

During the two months previous to examination, the tenderness in the breast had increased considerably. His general health otherwise was good. There was no family history of malignant conditions.

Results of the general examination were negative except for the lesion about the left nipple and atrophy of the left testis; the latter was the result of orchitis following mumps which had occurred when the patient was 35 years of age. In the area of the left nipple was an erythematous circular lesion about 3.75 cm. in diameter. There was considerable atrophy of the nipple. The lesion consisted of a slightly raised, infiltrated area and scattered, small, superficial crusts; when the crusts were removed, a raw granulating surface was revealed, the edge of which was slightly raised and sharply defined. There was no oozing, but the entire lesion was definitely, although slightly, indurated (figs. 1 and 2). A palpable mass was not present in the tissue of the breast proper, and there was no axillary adenopathy. The right breast was normal.

A clinical diagnosis of Paget's disease of the nipple and areola was made, and amputation of the breast was advised. Simple amputation of the breast well

17. Burns, J. C.: Paget's Disease of the Nipple and Carcinoma of the Breast with Special Reference to the Clinical Features and Pathology of the Condition, Edinburgh M. J. **17**:161, 1916.

around the growth was made on Jan. 25, 1923. The patient made an uneventful recovery and was discharged from the hospital five days later. In reply to the last inquiry, on Aug. 1, 1928, the patient stated that his health was good, and that there was no evidence of recurrence or of metastasis. He had not received treatment since the operation.

Pathologic examination of the tissue confirmed the clinical diagnosis of Paget's disease of the nipple and areola. Pathologic changes indicative of Paget's disease had taken place in the lactiferous ducts, and there was an accompanying squamous cell carcinoma, graded 2. The malignant changes of the ducts were confined to the walls themselves and were not extraductal.

Examination of a sagittal section (fig. 3) through the nipple and areola showed extensive alteration of the epidermis. Immediately beneath this area there was a

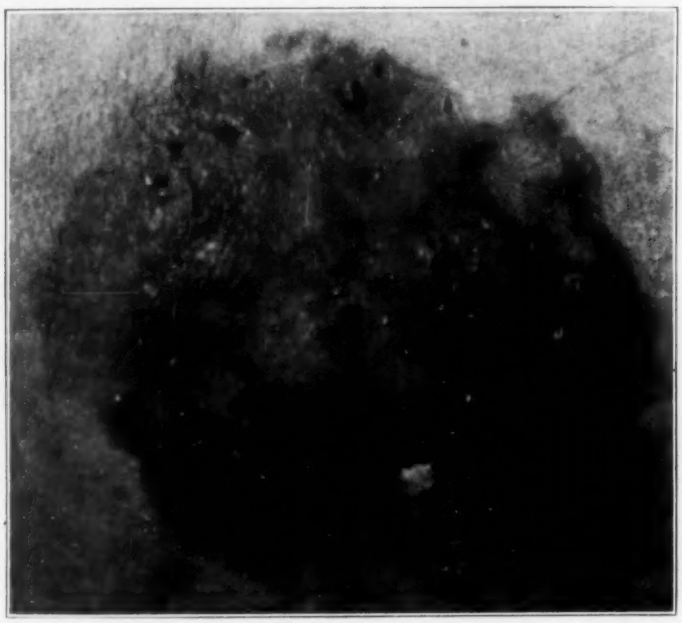

Fig. 2.—Close-up view showing destruction of the nipple and involvement of the areola; the lesion is sharply defined and indurated; it is somewhat scaly and superimposed by scattered, small, superficial, closely adherent crusts which when removed revealed a raw ganulating surface.

fairly well defined zone of infiltration in the upper part of the cutis; in one area of the section a pathologically involved lactiferous duct could be seen, beneath which there was an apparently normal duct. Even with low magnification, large cells of unusual appearance could be seen in the epidermis, and in the lactiferous duct, which was occluded, similar cells were noted.

The epidermis was irregular, atrophied and partially destroyed in places. The stratum corneum was frayed. The stratum granulosum remained preserved except where ulceration had taken place. With higher magnification (fig. 4), numerous pale-staining cells which were several times the size of a normal prickle cell could be seen in all the layers of the epidermis, including the stratum corneum. These

cells were irregularly arranged, occurred singly or in small clumps, and often were in alveolar-like arrangement. They tended to have features which distinguished them from the normal malpighian cells. They had lost their prickles and some of them had a single, large, pale-staining nucleus with one or more deeply staining nucleoli. The nucleus occupied the major portion of the cell. Occasionally, these large cells were multinucleated, having as many as four or five nuclei. These so-called Paget cells, when fully developed, are in striking contrast with normal malpighian cells because of their volume, the clear protoplasm, the enormous nucleus which may be vacuolated and the total lack of prickles. In the epidermis these cells have their origin in the basal and prickle cells, and may

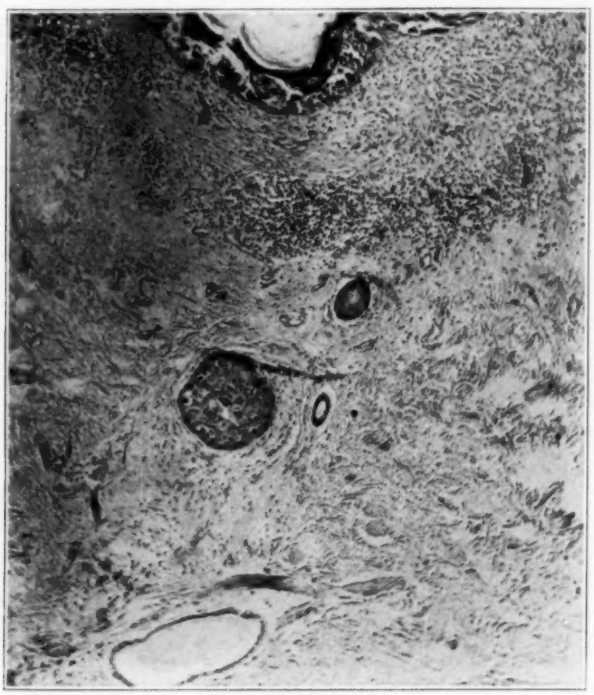

Fig. 3.—Sagittal section through the nipple and areola showing the structure of the epidermis, the dermal infiltration, an involved portion of the lactiferous duct and an uninvolved portion; × 40.

be frequently seen undergoing transition from these cells to the dyskeratotic cells designated as Paget cells, in accordance with Darier's [18] definition of dyskeratosis: "representing a faulty development of the epidermis in the course of which a number of malpighian cells become isolated and differentiated from their fellows, and undergo an abnormal, premature and imperfect keratinization, giving rise to either imperfectly formed cells of the squamous type or to the so-called Paget cells."

18. Darier, J.: Note sur la dyskératose, en particulier dans la "maladie de Paget," Bull. Soc. franç. de dermat. et syph. **32**:1, 1925.

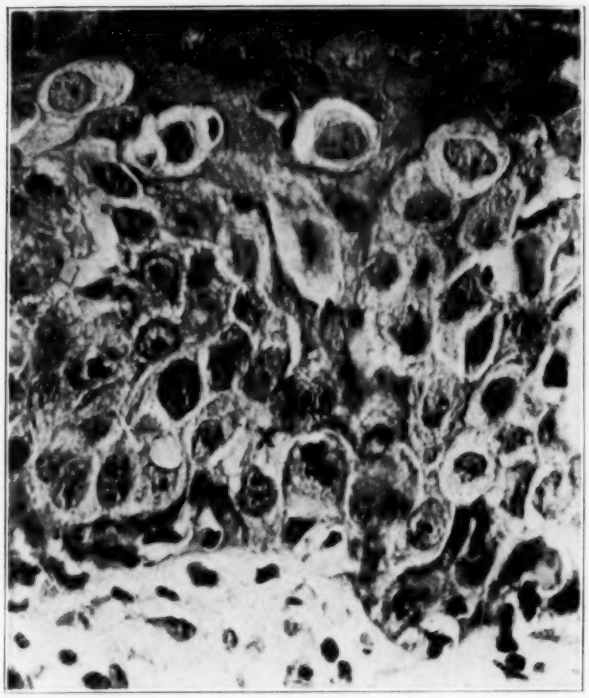

Fig. 4.—Paget cells; large dyskeratotic cells, absence of prickles, large pale-staining nucleus and vacuolated or finely reticulated protoplasm. *X*, Paget cell in basal-cell layer undergoing mitosis; × 350.

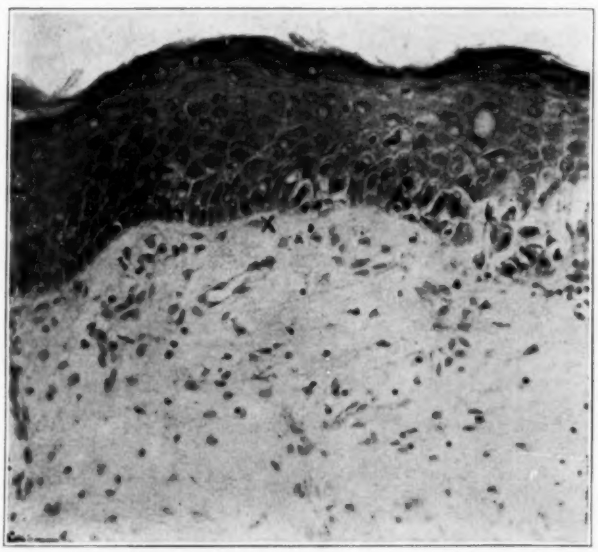

Fig. 5.—*X*, transition from normal basal and prickle cells to beginning Paget cells; × 150.

Figure 5 shows that there are transitional forms between malpighian cells and dyskeratotic cells, which may be observed undergoing mitosis (fig. 4) in the basal or prickle layers of the epidermis as well as in similar cells in the adnexa of the corium. The papillae had disappeared and the rete ridges were absent in the pathologic areas. In the cutis, immediately beneath the pathologic epidermal area (fig. 6), there was a zone of cellular infiltration which was fairly dense and composed chiefly of lymphocytes, a few plasma cells and polymorphonuclear leukocytes, occurring essentially around the superficial blood vessels. Some of the superficial and deeper blood vessels showed a slight degree of endothelial proliferation. There was present also very slight connective tissue proliferation. The elastic tissue was frayed and splintered where the infiltrate occurred, and was destroyed only where the infiltrate was dense.

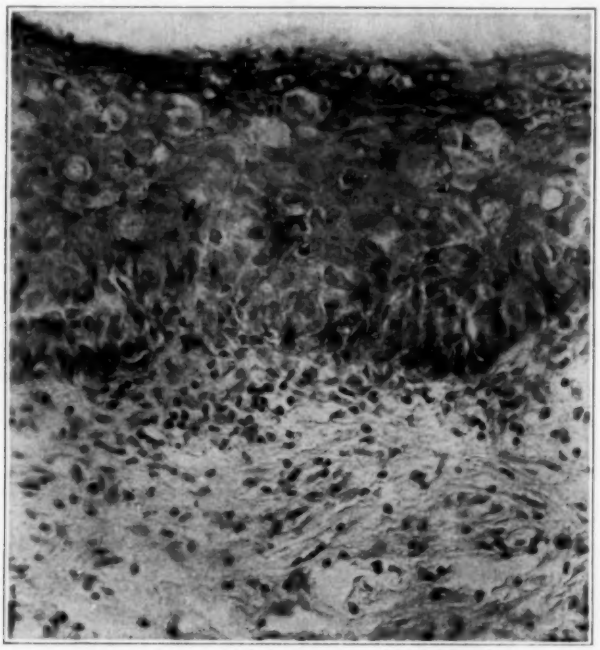

Fig. 6.—Paget cells at ×, with single and multiple nuclei and nucleoli; cellular infiltration composed chiefly of small lymphocytes around the dilated superficial blood vessels and lymphatics; connective tissue proliferation; × 272.

Many of the lactiferous ducts (figs. 7 and 8) also showed pathologic changes simulating those found in the epidermis and, in addition, showed malignant cells of the squamous cell type. The normal epithelial cells were replaced by large, vacuolated cells resembling the so-called Paget cells, described in the epidermis, and by cells of the type of protective epithelium; some of the individual cells lining the ducts showed evidence of cornification. Mitotic figures were not seen in this area.

The changes in the cutis contiguous to the involved ducts were similar to those below the epidermis, although slightly more marked. The muscle tissue was not altered. Outside of the lactiferous ducts, careful search throughout the cutis and

Fig. 7.—Lactiferous duct deep in the section; dyskeratotic epithelial cells lining the duct many of which resemble both squamous and Paget cells; the walls of the duct are found everywhere to be intact; periductal cell infiltrate composed chiefly of small lymphocytes; ductal squamous-cell carcinoma, graded *2*; × 75.

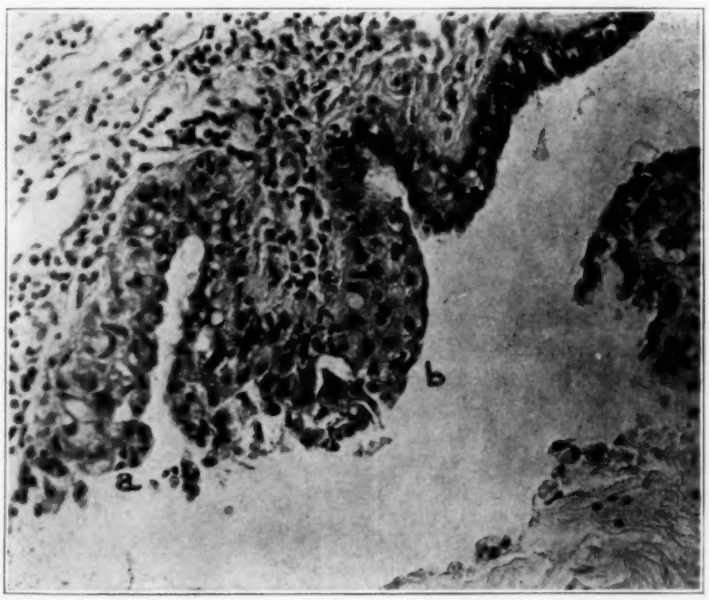

Fig. 8.—Lactiferous duct deep in the section showing involvement with a process similar to that seen in the epidermis; many of the cells are of the squamous type; *a*, evidence of cornification; *b*, large vacuolated cells of the Paget type. Squamous cell carcinoma of the duct, dilated blood vessels and lymphocytic cellular infiltration near the duct; × *272*.

subcutaneous tissue did not reveal evidence of invasion with Paget cells or with carcinoma cells. The sections extended deep into the breast proper and showed the atrophic lactiferous glands and ducts normally present in the breast of the male.

Figure 9 demonstrates the early pathologic changes that occur in the superficial lactiferous ducts. Early changes were occurring in one side of the wall of a duct, and in an adjacent duct (fig. 10) studied with numerous serial sections, evidence of more marked involvement was seen. These were not metastatic cells but were cells that had undergone dyskeratotic changes in situ; that is, alterations into cells of the prickle cell type, which were beginning to lose their intercellular bridges, and into large, vacuolated cells of the Paget type. The Paget cells and these prickle cells undoubtedly had a common origin; namely, the cells lining the lactiferous ducts.

Fig. 9.—Superficial lactiferous ducts; *a*, beginning epithelial changes in one side of the wall of the duct; *b*, more advanced changes in the walls of an adjacent duct; × 150.

Numerous serial sections were studied in an attempt to establish multiple points of origin of the pathologic process in the epidermis. Figure 11 emphasizes this feature. The dyskeratotic changes occurring in the epithelial cells of the epidermis, arising at scattered points, suggested the multiple origin, as may often be demonstrated in other types of malignant processes.

The multiple origin of the tumor cells of this disease suggested that similar changes might take place in the sweat ducts and in the epithelial cells of the hair follicles. Numerous serial sections did not reveal pathologic disturbances in the sweat ducts and glands. In these sections, however, there was involvement of the epithelial cells of the hair follicles similar to that noted in cells of the epidermis and lactiferous ducts. In the walls of the hair follicle (fig. 12) there was rather marked proliferation of the epithelial cells, many of which showed transitional and dyskeratotic changes. Many of the cells were several times the size of the

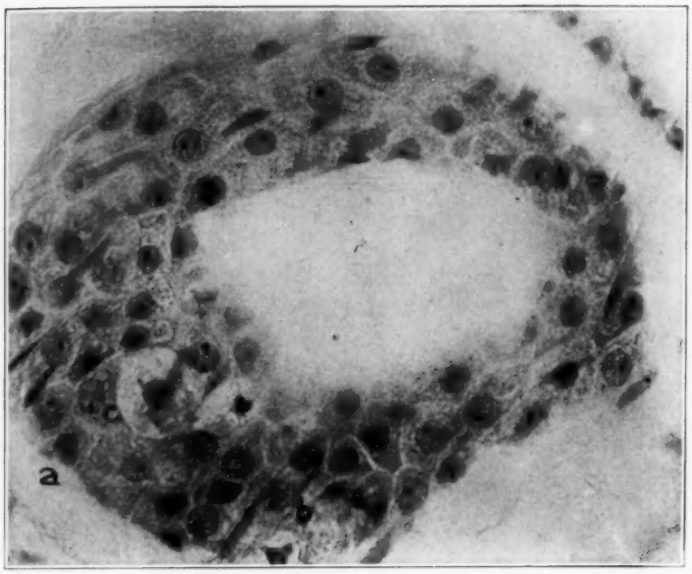

Fig. 10.—*a*, the normal columnar epithelial cells are gradually undergoing changes characteristic of a squamous-cell carcinoma of the duct; *b*, beginning loss of prickles and cornification of cells; *c*, the large vacuolated cells are the so-called Paget cells; × 450.

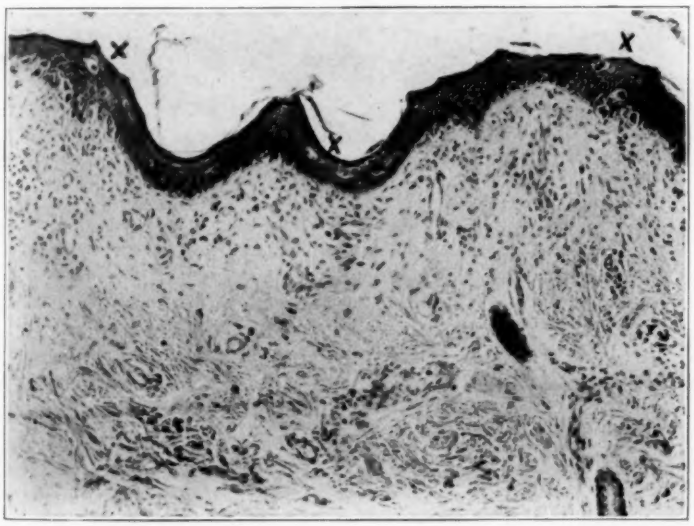

Fig. 11.—The dyskeratotic changes occurring in the epithelial cells of the epidermis apparently arise at scattered points, *x*, suggesting multiple origin; × 100.

normal epithelial cells of the walls of the hair follicles; they were vacuolated, contained two or more nuclei, and represented the cells designated as Paget cells. Figure 12 shows that one portion of the wall of the hair follicle (toward the epidermis) was involved, and that there were no pathologic changes in the other portion. The hair may be seen in the hair follicle.

The cellular infiltration around the hair follicle was composed chiefly of small lymphocytes. The elastic tissue was frayed and splintered where the infiltrate occurred. The connective tissue was not altered. Evidence of lymphatic invasion could not be demonstrated. The remaining adnexa of the breast and lactiferous glands did not show abnormal changes.

Fig. 12.—*a*, pathologic changes involving the walls at a hair follicle; there is marked proliferation of the epithelial cells of the walls of the hair follicle; with cells of varying sizes and shapes; many are vacuolated containing two or more nuclei and representing the cells designated as Paget cells; *b*, hair within the hair follicle; × 75.

It is evident that faulty development of cells takes place in the epidermis, in the lining of the ducts, and in the cells of the walls of the hair follicles. These cellular alterations may be termed, according to Darier's [18] definition, dyskeratosis. I agree that these dyskeratotic cells may be regarded as abnormal cells originating in situ, but that later, under certain unknown conditions and metamorphosis, they are capable

of metastasis. These dyskeratotic cells arise independently in the epidermis from the basal and prickle cells, in the epidermal cells of the walls of the hair follicle and in the columnar cells of the lactiferous ducts.

THEORIES OF PATHOGENESIS AND HISTOPATHOLOGY

Much confusion still exists as to the pathogenesis of these lesions of the nipple and areola of the male. If the discarded psorosperm idea of Darier [19] is omitted, it is found that the varied conceptions are all modifications of three main theories:

1. One conception attributes the peculiar changes in the surface as the result of neoplastic changes. The advocates of this conception believe that the Paget cells are tumor cells. Accordingly, this view permits of two possibilities: (*a*) that the cells have invaded the epidermis from the ducts or perhaps directly from the alveoli of the underlying carcinoma, or (*b*) that the cells are formed in situ by a process of differentiation.

2. Another conception is that the alterations in the surface epithelium are the results of nonneoplastic changes. This idea also permits of certain modifications, such as that the epidermal alterations of Paget's disease occur primarily, giving rise to secondary malignant processes in the underlying structures, or that the degeneration of the epidermal cells occurs secondarily to malignancy of the underlying tissues.

3. The third view is that the epidermal alterations occur independent of those in the underlying structures, are dyskeratotic or precancerous and may occur simultaneously or independently in the dermal adnexa and lactiferous ducts.

The first histologic sections from cases of Paget's disease were those made by Butlin,[20] in 1876, followed by those of Thin,[21] in 1881. Butlin [22] studied sections from four cases of Paget's disease of the nipple and areola. He expressed the belief that he could trace a direct relationship between what he interpreted as eczema on the surface and the carcinomatous changes in the breast which he believed developed secondarily. He was of the opinion that the former produced a proliferative change in the mucous layer of the epidermis. Butlin [22] stated

19. Darier, J.: Sur une nouvelle forme de psorospermose cutanée; la maladie de Paget du mamélon, Compt. rend. Soc. de biol. **41**:294, 1889.

20. Butlin, H. T.: On the Minute Anatomy of Two Breasts, the Areolae of Which Had Been the Seat of Long-Standing Eczema, Tr. Roy. Med. & Chir. Soc. **59**:107, 1876.

21. Thin, George: Malignant Papillary Dermatitis of the Nipple and the Breast Tumors with which it is Found Associated, Brit. M. J. **1**:760 and 798, 1881.

22. Butlin, H. T.: On the Minute Anatomy of Two Cases of Carcinoma of the Breast Preceded by Eczema of the Nipple and Areola, Tr. Roy. Med. & Chir. Soc. **60**:153, 1877.

his belief that he was able to prove that the carcinoma was derived from the epithelial elements of the mammary gland and its ducts; that the process, traveling along the large ducts, reached the smaller ducts and acini, which in turn became dilated and filled with proliferating epithelium. Then elements were discharged into the surrounding tissues as carcinomatous infiltration.

On the other hand, Thin [21] strongly opposed the term "chronic eczema" and proposed the term "malignant papillary dermatitis of the nipple," which he believed was always associated with carcinoma of the ducts. Thin [23] was the first to express the belief that the superficial lesion of the skin was secondary to carcinoma of the duct, and that the disease began in a position corresponding to the openings of the lactiferous ducts, and remained limited to that portion for some time before extending over the surface of the nipple.

Jacobeus [24] concluded that Paget's disease is a carcinomatous process from the beginning and arises in the glandular epithelium of the ducts, and that the changes in the skin are due to proliferation and extension into the skin of cancer cells originating from the glandular epithelium. He agreed with Sekiguchi,[9] Pautrier [25] and others that the Paget cells are not locally degenerated epithelial cells, but are metastatic cancer cells. Jacobeus expressed the belief that the late appearance of a carcinoma points to the benignancy of the primary disease, and is due, in part, to obstruction of the growth of the tumor exerted by the connective tissue and possibly the striated muscle, but Sekiguchi observed that the lactiferous ducts undergoing carcinomatous degeneration are usually encircled by a heavy ring of elastica, which seems to have some defensive action against the tumor cells.

Sekiguchi concluded that Paget's disease is a primary carcinoma of the orifices of the lactiferous ducts or, in extramammary regions, the sudoriferous ducts. The grouping of the Paget cells in the outlets of the lacteal ducts in the early stage of the disease and their vacuolated, seldom fatty, degeneration led him to the opinion that they are tumor cells which have migrated from the lacteal duct which has undergone carcinomatous degeneration. They have then undergone, he thought, some regressive metamorphosis during their migration in the intercellular lymph channels which has lessened their invading power. In the

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23. Thin, George: On the Connection Between Disease of the Nipple and Areola and Tumours of the Breast, Tr. Path. Soc. London **32**:214, 1881.

24. Jacobeus, H. C.: Paget's Disease und sein Verhältniss zum Milchdrüsenkarzinom, Virchows Arch. f. path. Anat. **178**:124, 1904.

25. Pautrier, L. M.: Paget's Disease of the Nipple: True Cancer Tending to Invade Epidermis and Necessitating Total and Early Amputation of the Breast, Arch. Dermat. & Syph. **17**:767 (June) 1928.

very early cases, the Paget cells were noticed in the epidermis only in the vicinity of the outlet of a lacteal duct.

Muir [26] reported five cases of Paget's disease of the nipple, all of which were associated with carcinoma of the breast. He adopted the view that Paget cells are tumor cells produced by neoplastic proliferation of the upper parts of the lactiferous ducts, from which they pass into the epidermis where they produce the characteristic Paget lesion.

Arzt and Kren [27] divided their cases of Paget's disease into the three following groups: (1) Paget's disease of metastatic origin, with symptoms of a deep-seated tumor; in these cases the lactiferous ducts were involved, proving the glandular origin of the disease; (2) metastatic Paget's disease without a deep-seated tumor, in which the finding of carcinomatous lymphangitis of glandular structures permitted the assertion that in these cases the tumor was of metastatic origin, and (3) precancerous Paget's disease. In none of their cases was a glandular carcinoma found. They held that in most cases the Paget cell is a carcinomatous cell of glandular or canalicular origin which invades the skin by a special metastatic process.

Pautrier is now the proponent of the theory that Paget's disease of the nipple is not mere precancerous dyskeratosis, as upheld by Darier,[18] but genuine epidermotropic carcinoma, symptomatic of carcinoma of the breast. Pautrier expressed the belief that the so-called Paget cells do not behave as mere epidermal cells that have undergone segregation or have been isolated, but as fertile, invading and destroying cells which migrate through the epidermis as true carcinomatous cells. He argued that if the Paget cell is derived from a malpighian cell, one should be able to find transitional forms between these two cellular types, but he had been unable to find any. He also answered the objection that is raised against the primary carcinomatous nature of Paget's disease in cases which occur outside the breast, by showing that the cases which he investigated had invariably been associated with carcinoma of a nearby viscus.

Von Winiwarter,[28] on the other hand, traced all the stages between the prickle cells of the epithelium and the Paget cells, and expressed the belief that Paget's disease is a special form of carcinoma of the skin, with a characteristic course, and that its relative benignity allies it to rodent ulcer. Sekiguchi stated that he did not believe that the transition

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26. Muir, R.: Paget's Disease of the Nipple and Its Relationships, J. Path. & Bact. **30**:451, 1927.

27. Arzt, L., and Kren, O.: Die Paget Disease mit besonderer Berücksichtigung ihrer Pathogenese, Arch. f. Dermat. u. Syph. **148**:284, 1924-1925.

28. Von Winiwarter, Hans: Ueber Pagetsche Krankheit, Arch. f. Dermat. u. Syph. **85**:239, 1907.

of epidermal cells into Paget cells occurs but that the epidermal cells undergoing vacuolation from the encroaching Paget cells are often confused with Paget cells.

Thin's [23] explanation of the formation of the carcinomatous tissue was not accepted in 1884 by Duhring and Wile,[29] who claimed that the condition of the skin appeared as an abnormal proliferation and degeneration of the rete, with secondary destruction of the papillae of the corium and subsequent extension of the process into the ducts. Finally, by excessive proliferation deep in the breast, the cells burst out of the ducts into the surrounding connective tissue and formed carcinoma. The carcinomatous change, they therefore believed, took its origin from epithelium of the smaller ducts and advanced from below upward and outward, as far as the skin was concerned, and that it later attacked the glandular structure.

The parasitic (psorosperm) theory advocated by Darier,[19] in 1889, and supported for a number of years, marked a distinct stage in the history of the disease. This theory was overthrown by further studies, and there was a return to the views of Duhring and Wile. Since then, Darier [18] has changed his views. Paget's disease of the nipple and areola is held by many other dermatologists to be a form of dyskeratosis, in accordance with a definition of the term given by Darier; [18] namely, that it is merely a precancerous state but that it may ultimately be followed by carcinoma of the breast, as has been proved.

The studies of Jopson and Speese led them to believe that Paget's disease of the nipple is a primary disorder beginning in the cells of the rete malpighii, that it is potentially malignant, although lacking the ordinary characteristics of a malignant disease and that it is identical with the disease known under the name of extramammary Paget's disease. It is precancerous in the sense that it induces, in the superficial lactiferous ducts and acini, epithelial changes which are followed by carcinoma. They were able to trace the connection between the superficial changes in the skin at the point of opening of one of the lactiferous ducts, and were able to see the point at which the proliferated cells plugging the ducts apparently break through the wall of the duct and invade the connective tissue as a carcinomatous process.

Burns, in 1916, reported a case in a woman who had an eczematoid condition of the nipple as described by Paget, with a lump in the breast. Paget cells were present in the epidermis. Examination of sections from the breast revealed blocking of the ducts and lymphatics with masses of proliferating carcinomatous epithelial cells, evidently a carcinoma of the

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29. Duhring, L. A., and Wile, Henry: On the Pathology of Paget's Disease of the Nipple, Am. J. M. Sc. **88**:141, 1884.

duct. The acini were not affected to any extent. Burns expressed the belief that the condition in the breast is secondary to that in the epidermis, and stated that carcinoma of the skin of the nipple gives rise to a chronic inflammatory process of the subepithelial tissue which in turn gives rise to malignant changes in the tissue of the breast.

Handley was of the definite and conclusive opinion that Paget's disease is due to lymphatic edema of the nipple, dependent on blocking of the lymphatics by permeation extending from a preexisting carcinoma of the breast, and that the "eczema" is always secondary to a preexisting carcinoma.

McFarland,[30] in 1924, wrote that the "earliest changes consist of lymphocytic and plasmocytic infiltration of the corium, soon followed by looseness and apparent weakness of the resisting power of the tissue that permits the epithelial pegs of the rete to extend downward a short distance, and their cells to separate slightly. The separated cells do not tend to become invasive but lose their prickles. The described changes seem to begin in the prickle-cell layer and extend both upward and toward the surface, and downward toward the malpighian layer. The Paget cells do not tend to bear the slightest resemblance to carcinoma cells and von Winiwarter has been able to discover the intermediate stages between the normal and the vacuolated epidermal cells."

Kilgore expressed the belief that it is unlikely that a malignant condition of the epithelial cells occurs on account of overfilling of the ducts and rupture of their walls (views that have been expressed by Duhring and Wile, Jopson and Speese, and Burns), but that the latter occurs on account of the malignant properties already developed in the cells. He considered the view that "the Paget cells are tumor cells" to be untenable and argued that the Paget cells resemble, neither morphologically nor in behavior, the cells of carcinoma arising in the skin or in the breast, and that the best opinion is that they are degenerated epidermal cells. He also expressed the belief that Paget's disease is not in itself a form of carcinoma, and that true Paget's cells are not migrated carcinoma cells. It has often been pointed out by others that the disease exists clinically for years in other regions of the body. In some cases it exists without ever being associated with carcinoma in any form; in others it is followed by squamous cell carcinoma, or, as in an unusually early case of the breast which he studied, the typical histopathology of Paget's disease is found but there is no involvement of the ducts. He felt, from the study of four cases, that "Paget's disease, while usually primary, may also be secondary to carcinoma of the underlying breast tissue," and stated that if the deductions in his cases are correct, then

30. McFarland, Joseph: Surgical Pathology, Philadelphia, P. Blakiston's Son & Company, 1924, pp. 480-483.

"both schools in the controversy over the primary or secondary nature of Paget's disease have been right since either order of events may occur."

Cheatle,[31] in 1924, reported a series of nine cases of Paget's disease of the nipple, all of which were associated with carcinoma. He concluded that Paget's disease is a primary carcinoma, with its common site of origin in the outlet of the mammary ducts, and that the agent of irritation which induces Paget's disease is also concerned in inducing primary carcinoma of the breast. The irritating agent reaches the breast by means of the mammary ducts. Carcinoma below the sinuses of the lactiferous ducts, according to Cheatle, does not produce Paget's disease.

From a critical examination of three cases of Paget's disease of the nipple, Arnd,[32] in 1926, came to the conclusion that the disease is a precancerous one. He expressed the belief that the Paget cells are proliferative epithelial cells, which appear as vacuolated cells on account of their glycogen content. The Paget cells arise independently and from multicentric origin, from the epidermis, the dermal adnexa and the lactiferous ducts. In two of his cases, he noted the origin of the Paget cells in the hair follicles, sebaceous glands and lactiferous ducts. In one of these cases Paget cells were also noted in the sweat glands. The accompanying carcinoma, the author concluded, may result from the epidermal covering as well as from the dermal adnexa and lactiferous ducts.

COMMENT

The attitude as to the pathogenesis of this important and interesting disease is not only of academic interest but of tremendous clinical significance. The final diagnosis rests on histopathologic studies and it must be emphasized that an exhaustive examination must be made in every case in which the clinical diagnosis of Paget's disease has been made. Biopsy of the nipple is not considered sufficient; the search for the deep-seated mammary carcinoma must be made by histologic examination of the whole mammary gland.

In the case of Paget's disease occurring in the male nipple and areola reported by Jonas, microscopic sections of the breast were not shown. The presence of Paget's disease was accordingly not demonstrated. In the case reported by Handley, the presumption is that the "eczema" may have been due to lymphatic permeation and did not, in accordance with the present accepted views, exemplify true Paget's disease.

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31. Cheatle, G. L.: Paget's Disease of the Nipple, Brit. J. Surg. **12**:284, 1924.

32. Arnd, Witti: Ueber die Pagetsche Erkrankung der Brustwarze, Virchows Arch. f. path. Anat. **261**:700, 1926.

Therapeutic measures, ranging from the most conservative medical treatment to the most radical surgical intervention, depend on the attitude in regard to the pathogenesis of Paget's disease. The present consensus in regard to treatment, however, tends to approach uniformity. It is beginning to be generally conceded that early and complete removal of the mammary gland is the proper procedure. The question as to the removal of the axillary lymph nodes is similar to the problem involved in any carcinoma of the breast. The histogenesis undoubtedly will continue to be the subject of much future discussion. The interpretation of pathologic data will still remain the obstacle to final agreement.

I am a proponent of the theory of the multiple origin of the abnormal cellular alterations in Paget's disease. The alterations which take place in the lactiferous ducts and the hair follicles are independent of those which take place in the epidermis, just as distant portions of the epidermis may become involved, with normal tissue intervening. Certain cells or groups of cells are subject to those changes which are recognized as dyskeratotic and malignant. The Paget cells may be traced and found to originate in the protective epidermal cells or may arise from the epithelial cell linings of the epidermal adnexa. The Paget cells are cells which have undergone abnormal keratinization and are tumor cells in a broad sense of the term. Lacking, however, true malignant properties, they may better be regarded as precancerous cells, with the potentiality of becoming malignant. Those factors which cause dyskeratotic changes on the one hand and malignant changes on the other hand are not fully understood.

The late appearance of a carcinoma in numerous cases of Paget's disease of the nipple and areola points to benignancy of the primary disease and is probably due in part to the obstruction to the growth of the tumor exerted by the cellular infiltration, the connective tissue and possibly the striated muscle. Although inability to find the carcinoma of the breast does not prove its absence, the presence of the carcinoma does not prove its primary existence.

Whereas the mammilla is the preferred site of Paget's disease, apparently true cases of the disorder have been reported in other situations. Pautrier recently made an exhaustive review of the literature on extramammary Paget's disease, in which he cited, among many cases, three which were associated with deep-seated carcinoma. However, it cannot be said with certainty that all cases reported as extramammary Paget's disease conform in their clinical and histopathologic features with the much discussed and well known disease about the nipple. Fraser [33] expressed the belief that there is strong evidence that the so-called

33. Fraser, J. F.: Bowen's Disease and Paget's Disease of the Nipple: Their Relation to Dyskeratosis, Arch. Dermat. & Syph. **18**:809 (Dec.) 1928.

extramammary Paget's disease is Bowen's disease. The association with a deep-seated carcinoma outside of the mammary region cannot be held as conclusive evidence of the primary carcinomatous nature of the affected viscera. Here, too, the primary disease occurs as dyskeratosis of the epidermal cells, or of the cells of the epidermal adnexa, giving rise to changes similar to those that occur in the disease of the breast and thence to cells exhibiting properties of malignant cells.

SUMMARY

A case of Paget's disease occurring in the nipple and areola of a man is reported. The disease in the male is extremely rare. The pathologic data in the case reported are commented on, and photomicrographic illustrations are given. Paget's disease has multiple points of origin: in the epidermis, hair follicles and lactiferous ducts. The cellular changes are dyskeratotic and occur in situ. These changes may give rise to varying types of cells, for example, Paget cells and cells of varying degrees of malignancy. These malignant cells may in turn have the properties peculiar to cells bearing this designation. The various views as to the pathogenesis and histologic manifestations are reviewed.

HISTOPATHOLOGY OF ANGIOKERATOMA*

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Angiokeratoma was carefully studied and named in 1889 by Mibelli,[1] who was the first to investigate minutely its pathologic histology. Prior to this, it had been described under a diversity of names.

The disease, which is a rare one, usually occurs on the backs of the hands and the dorsal surface of the toes. It has been observed on many other areas, but there is some question whether all of the reported cases are true examples of angiokeratoma.

The lesions are made up of minute vascular dilatations or telangiectases, pinpoint to pinhead in size, of a hue varying from dusky pink to deep purple, simulating, sometimes, a purpura, and situated on a verrucous base of variable thickness.

The histopathology of angiokeratoma as originally described by Mibelli presents a fairly characteristic picture, but owing to the admission into the literature of many borderline cases, slight confusion and differences of opinion exist.

One of the earliest changes is vascular and consists of dilatation of one or more of the papillary branches which are given off from the subpapillary plexus. This dilatation is not always arterial, for the venous capillaries are frequently enormously distended, sometimes primarily, although usually secondarily. As a rule, this dilatation steadily progresses without marked evidence of inflammation, gradually causing a disappearance of the other elements within the papilla until the entire space is actually occupied. Microscopic study of the contents of these vessels or lacunae show that some contain erythrocytes and leukocytes in their normal proportion, while others are partly filled with a serofibrinous débris. At this stage in the development, a dilated capillary retains, intact, its endothelial wall, which is later lost as the downgrowth of epithelial cells progresses and finally encloses the vessel. As these capillaries or lacunae enlarge within the papillae, the elastic network of fibrils normally present is pushed aside and against the basal layer cells of the interpapillary processes to form, for a time, a distinct border.

Later, however, as the vessels or lacunae become surrounded by the epidermal layer, this elastic fiber border is lost. Fragmentation and

* Submitted for publication, Jan. 17, 1930.

1. Mibelli: Gior. ital. d. mal. ven. **30**:285, 1889.

diminution of the elastic fibers in the normal papillae do not occur unless other evidence of inflammation exists. Cellular infiltration consisting of small mononuclear and polymorphonuclear leukocytes occasionally observed in the upper corium is not a constant feature of the disease. The sweat glands occur normally, and their ducts are seen readily penetrating the enormously thickened stratum corneum.

Noticeable among the epidermal changes are the hypertrophy of the stratum corneum and the increased thickness of the granular layer. Epidermal edema in the vicinity of the lacunar spaces is believed to be due to pressure.

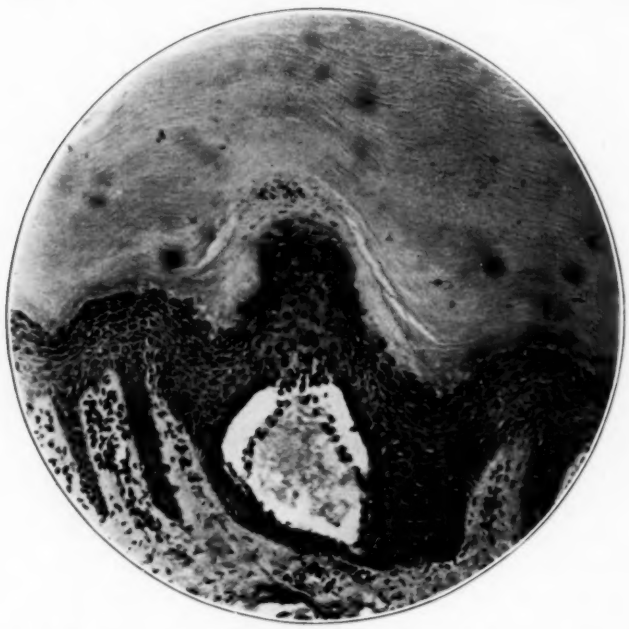

Fig. 1.—Angiokeratoma; × 150. The stratum corneum is enormously thickened and the granular layer stands out with unusual prominence. Within the epidermis one of the lacunae whose endothelial wall is undergoing destruction, may be seen partly filled with blood cells. Hematoxylin-eosin.

It is thought that these lacunar spaces so characteristic of angiokeratoma are formed from the papillary vessels alone and that the vascular dilatation distinctive of pernio and present in the deeper layers of the corium fails to enter into their formation but persists as such.

While usually the lacunae occur singly, occasionally they are divided by septums into several compartments, which persist even within the malpighian layer. These blood spaces during the latter stages of their evolution occur entirely enclosed within the epidermis, disappearing finally within the hyperkeratotic layer, where they become obliterated or occasionally rupture externally. In some instances, subepithelial and

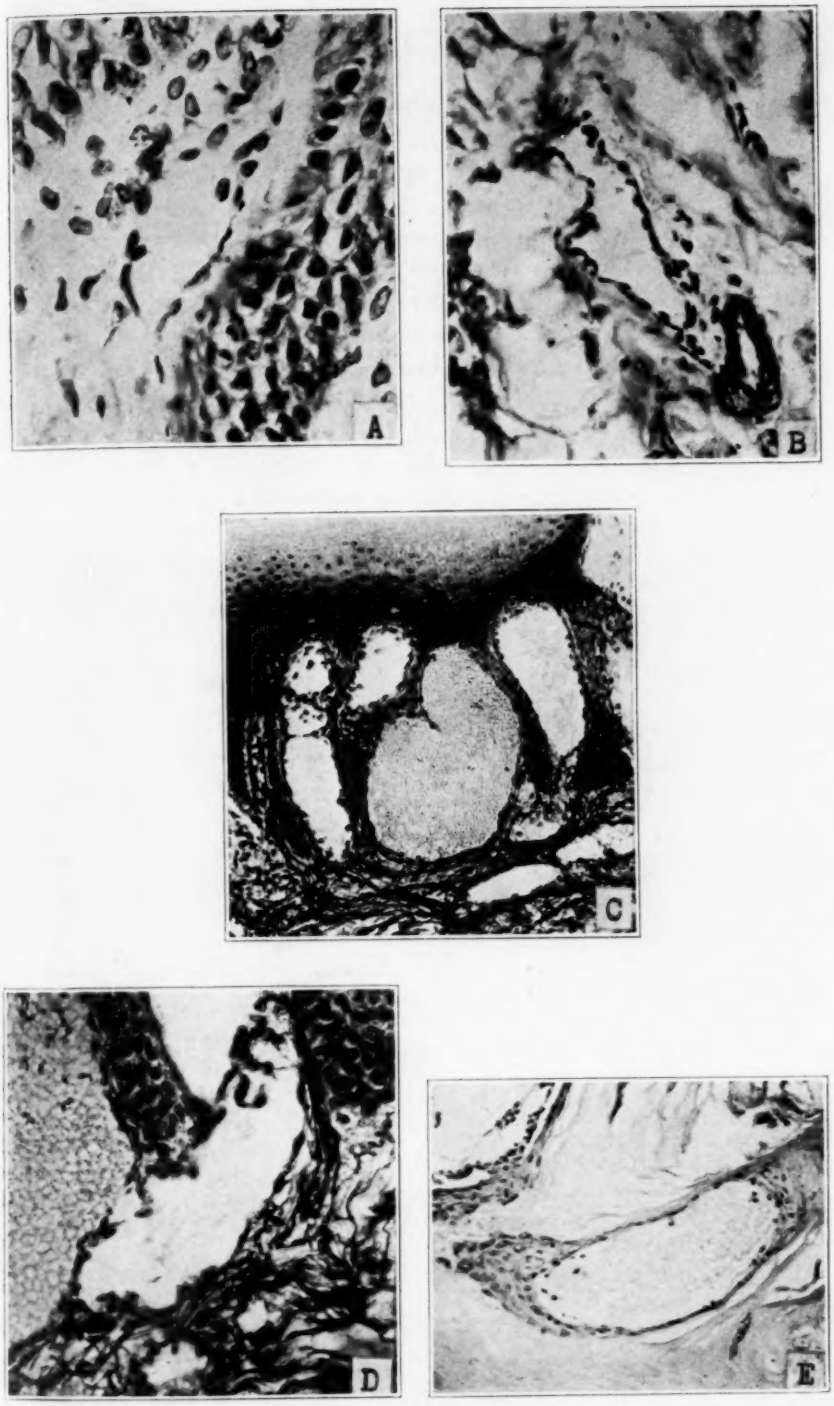

Fig. 2.—*A*, the earliest evidence of capillary dilatation within a papilla; *B*, dilated vessels deeply situated in the corium; *C*, lacunae divided into several compartments by septums composed largely of epithelial cells; *D*, blood space still retaining its endothelial wall; *E*, a superficially located blood space or lacuna which has almost reached the point of rupture.

intra-epithelial hemorrhages, principally traumatic in origin, take place, but they are by no means characteristic of this disease.

Angiokeratoma may be differentiated from (1) the verrucous form of lymphangioma circumscriptum, which has small, deep-seated vesicles of lymphatic origin containing clear fluid; (2) verruca vulgaris, in which vascular dilatation is entirely lacking, and (3) the angiomas, which fail to show evidence of hemorrhage, inflammation or injury to the blood vessel and have a continuous endothelial lining.

Histologically, in many respects, angiokeratoma bears out the opinion of such observers as Fordyce, Unna and others, that local circulatory weakness, such as exists in erythema pernio, lupus pernio and dermatitis congelationis, is an important factor, and the location of the lesions seems to indicate that external pressure plays a definite rôle.

Both Mibelli and Pringle [2] suggested that these lacunar dilatations were the result of changes in the papillary capillaries, such changes being caused by the various factors that impaired the contractility of the vessel wall.

These capillaries are simply fine tubes the walls of which are composed of an endothelial layer and which have neither muscular fibers nor an outer fibrous coat. Owing to their structure, they are easily dilated by increased internal pressure or a back venous pressure.

It has been my observation that the disease is more prevalent in those countries where chilblain abounds.

According to Wile,[3] angiokeratoma frequently becomes infected and terminates in atrophy.

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2. Pringle: Brit. J. Dermat. **3**:237, 1891.

3. Wile, U. T., and Belote, G. H.: Angiokeratoma: Confused Clinical and Pathologic Picture, Arch. Dermat. & Syph. **18**:501 (Oct.) 1928.

COINCIDENCES IN MEDICINE*

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That "post hoc non propter hoc" is sometimes a worthy maxim seems well exemplified by the misadventures of the two patients whose histories follow. Because of medicolegal possibilities both are of considerable interest.

H. R., a white man, aged 61, was referred by Dr. W. Mallory for treatment with arsphenamine in the hope that it would alleviate the great pain associated with an aneurysm of the transverse arch. Exactly twelve hours before the time

Alopecia areata.

appointed for the injection, the aneurysm ruptured. No antecedent treatment of any kind had been given.

As though to keep the law of averages, the following events occurred a month or two later:

Miss H., aged 41, had been a patient on and off for ten years. On June 6, 1929, she again came to the office because of a neurodermitis about 1 inch (2.5 cm.) in diameter, situated on the back of the scalp 1 inch (2.5 cm.) above the hair line. The patient gave a definite history of being unhappy in her work. One-fourth unit of the x-rays was used to an area about 2 inches (5 cm.) in diameter; on June 14, this dose was repeated; on June 19, the same dose was again given; and on June 28, ⅛ unit was employed. At this time, the skin condition was almost healed.

* Submitted for publication, Jan. 11, 1930.

The patient was not seen again until Sept. 30, 1929, when there was a bald area roughly coinciding with the area to which the x-rays had been administered. The patient stated that the hair had begun to fall two weeks after the last administration of the x-rays. Examination of the area revealed that there were a number of short stubs characteristic of alopecia areata, and that there were several irregular convex edges protruding out from the bald area into the hairy portion of the scalp. Ultraviolet treatment was started, but the various convex areas of baldness continued to spread in a fashion characteristic of alopecia areata. Weekly treatments with the ultraviolet lamp were given, but no new hair appeared until December 4, and by January 3 this had increased until about half of the area was sparsely covered.

There are at least three reasons for believing that the loss of hair was not due to the treatment with the x-rays, but was an interesting coincidence.

The first of these reasons is that the total dosage was just beneath 1 unit, administered over a period of little more than three weeks. This dosage has frequently been employed in other persons without causing alopecia.

The second reason is that the x-ray outfit had been carefully standardized. The dose of 1 unit was based on the minimum epilating dose as observed on the scalp in two children. Since two meters were employed on the machine, there could be no chance of an overdose due to a faulty meter.

The third reason is that the bald area presented all the characteristics of alopecia areata, and continued to spread for at least four months after the last treatment. No new hair returned until five months after the last irradiation, whereas hair removed by the x-rays almost invariably returns by the end of the third month.

In all probability, the alopecia areata occurring after the treatment with the x-rays represented a pure coincidence. C. A. Simpson stated that he had observed one similar case.

ICHTHYOSIS HYSTRIX IN A CHINESE

REVIEW OF THE LITERATURE *

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Nearly ten years ago, a party of young people who were sightseeing in the Orient and passing through a Chinese town stopped before a young man seated in the doorway of his home, astonished at the peculiar skin disease from which he was suffering. Unable to communicate with him because they could not speak Chinese and he could not speak English, they attempted to take a photograph of him, but met with strong opposition until some money was paid, when the picture used to illustrate this communication was secured. On their return home, their negatives were developed and printed and each member of the party was furnished with a copy of this picture. A year or so later, it was brought to me by a student in the medical class of the University of Pennsylvania, who supposed the man to be suffering from leprosy. I at once saw that there was a mistake in diagnosis, recognized the disease as ichthyosis hystrix, and, interested because of its extreme rarity and because I had never known of a case in a Chinese, expressed a desire to learn more about the case. Willing to cooperate, the student visited the friend from whom he had obtained the photograph, related my interest in the case and obtained his cooperation. Considerable correspondence resulted, but no one of the original party could remember who had taken the picture. The member who now has the negative, knowing that the photograph had not been copyrighted, gave his consent to my using it in any way that I desired, specifying, however, that his own name should not be divulged.

It was impossible to learn any particulars about the patient, because of the circumstances already mentioned. However, in one of the letters the following passage of importance occurs: "The excrescences appear to grow in size and spread—the end being gray and dry, while the base, attached to the body is pink, inflamed and moist. I would say that the larger ones would drop off."

The lesions in the case here presented were so exaggerated and striking that an attempt was made to determine how many similar cases had been reported, and what was known about them. What follows concerns only that variety of ichthyosis known as hystrix.

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* Submitted for publication, Dec. 21, 1929.

* From the McManes Laboratory of Pathology of the University of Pennsylvania.

Ichthyosis is a hypertrophic disease of the skin, characterized by dryness, keratosis, wrinkling and the formation of larger or smaller horny scales, warty growths, horns or spines. It is almost always congenital, frequently hereditary, and commonly, in consequence, familial. It presents every gradation from mere dry roughness of the skin to its transformation into horny plates only comparable to those of an alligator, or to parts of it becoming thickly studded with bristles or horny pegs suggesting the quills of a hedgehog or a porcupine. It is the latter variety that receives the name of ichthyosis hystrix. The cases are not always clear cut, but blend with one another, so that what one writer has considered hystrix is not always so classified by another.

Ichthyosis hystrix in a young Chinese.

The lesions of ichthyosis hystrix consist of keratin formations, the most characteristic of which is the spine. Various other appearances are described. In Hutchinson's case the lesions were said to have had "the general appearance of a single layer of millet seeds loosely packed and cemented together." This diminutive cobblestone pavement may be all that is seen if the chief lesions are so situated that friction wears off the keratin almost as fast as it is formed. But usually the keratin formation over the enlarged papillae builds up to greater heights, and bristles or even horns are formed. In Pettigrew's case, there were coarse bristles. Other cases showed coarse spines. In Martin's case and in that shown here, there were coarse rough ridges and pegs. In a few cases, there were what appeared like aggregations of cutaneous

horns; in such cases the diagnosis is not always easy to make, as Hutchinson found. A case of this kind is illustrated in Cruveilhier's atlas. Excessive cutaneous horns in ichthyosis hystrix may result in marked deformity of the fingers and toes, which may lack nails, be shortened and occasionally be made useless. Lesions on the palms, soles, elbows, knees and buttocks may be worn off so that only thick scales appear, or they may grow so rapidly and be so stiff as to cause intolerable suffering from their pressure.

The base of each horny lesion consists of freshly formed keratin and may be slightly pearly and lustrous, but as it becomes older and the horny material dries, it becomes hard, grayish, brownish or even blackish in appearance—ichthyosis hystrix nigricans.

Martin said of his patient: "His whole skin except the face is covered with strong hairs like the bristles of a boar—varying in color from light brown to the deepest black and in some parts having a yellow color as if bleached by fire—they are mostly long and flat, standing out at right angles except where by pressure of the skin they are made to assume an intricate disposition."

When many coarse bristles or spines occur in close juxtaposition, dirt is apt to collect among them, and cleanliness becomes difficult or impossible. Such a condition obtained in Derocque's patient, whose hands and feet "semblent avoir été trempés dans du bitumen fondu que se serait fendillé, crapulé, en se desséchant" (seemed to have been dipped into pitch which cracked and polluted in drying). He added that the man gave off an odor "like an elephant."

Inflammation sometimes enters into the picture with various modifications, as in the man reported by Selenew, who had bullae about the lesions—ichthyosis hystrix bullosa.

The spines and spikes are not permanent; when they have attained a certain size, they become dry and brittle and tend to detach. Most of the protocols in which this detail is mentioned tell the same story. The excrescences grow chiefly during the winter, attaining the maximum size by spring. With the advent of summer, the patient begins to sweat, and many of the lesions are shed. Patients with ichthyosis suffer a good deal from lack of perspiration, and the dryness of their skins seems to predispose to the keratoses. Pettigrew said of his "biped armadillo" that "he moulted once a year, in the spring." In Martin's cases "they were constantly being exfoliated and renewed in all parts of the body."

Moisture no doubt has much to do with the shedding, for Scholtz said of the "greenish filiform striated warty formations bearing a striking resemblance to porcupine skin" from which his patient suffered, that "they were easily shed and easily removed by washing," and that "they disappear in summer, to reappear in the winter."

The cause of the disease is unknown. Unna was of the opinion that the disease itself is not congenital, but that there was a distinct congenital predisposition to it, which seems to be supported by the instance of the four sisters reported by Lenhoff, two of whom had slight xeroderma, one well marked ichthyosis and the other ichthyosis hystrix.

The patient may be born with what appears to be a normal skin, but usually there is some abnormality. Thus in the case reported by Radcliffe Crocker for Tilbury Fox, the skin at birth presented an appearance of "bruising" in several places on the thighs; on one of them there was a "raw place" the size of a finger. The two brothers whose cases were reported by Davies were born with their hands and feet covered with a film "as though white-washed." Duckworth's patient had "red spots at birth, and in three days there was heaping up on them." In case 1 reported by Philippson, the disease began shortly after birth with a red spot on the right knee. Sander's patient at birth presented several "bruised or abraded areas on his thighs and left foot."

The first manifestation of the disease may be considerably later, as is shown by the following tabulation of the reports giving data on this subject:

Period After Birth	No. Cases
15 days	1
3 months	4
18 months	1
20 months	1
2 years	2
3 years	2
70 years	1*

* This case must be taken with reserve.

In the case reported by Boggs, that of a woman, aged 52, who had had the lesions from birth, the patient attributed them to the fact that her mother had been frightened by a snake while pregnant.

The factor of inheritance is strongly supported by such evidence as the occurrence of ten cases in four generations of the famous Lambert family, of whom much is to be said later; by the case reported by Selenew in which a man had a little son similarly affected, and by the woman patient of Martin, who had a little daughter with the same disease. This has led to the diease being called ichthyosis hystrix hereditaria. But in the greater number of the reported cases it is expressly stated that there were no other cases in the family, and that the parents were normal.

All of the patients in the Lambert family whose sex is known were males, so that it might be concluded that the disease is linked to the male sex. That is, however, an error. The disease is common to both sexes, though twice as frequent in males; in forty-two cases with data on sex, twenty-eight were males and fourteen females.

The disease probably has nothing to do with geographic distribution or race. In forty-two reported cases the distribution was as follows:

	Males	Females	Total
British Isles	10	3	13
United States	5	5	10
Germany and Austria	4	5	9
France	2	1	3
Italy	2	0	2
India	1	0	1
Canada	2	0	2
Australia	1	0	1
China (present contribution)	1	0	1
	28	14	42

The lesions are almost always bilateral and more or less symmetrical, but there are exceptions. The term ichthyosis hystrix linearis is a name given to minor degrees of limited extent. Some observers have supposed the lesions to be of nervous origin, others that they were exaggerations of the warty conditions sometimes found in nevus verrucosus.

Nervous atrophies have, indeed, been found associated with ichthyosis and its hystrix variety, but it is almost inconceivable that they were the primary cause of the disease.

In the case reported by Curtis the lesions were on the left side only, but there is a slight doubt about the correctness of the diagnosis. The Indian whose case was reported by Lukis had lesions only on the right side above the hip. In Philippson's case 2 most of the lesions were on the right leg, though there were others elsewhere. In Ryan's case, the lesions were almost entirely limited to one side of the body.

The lesions are usually most in evidence on the outer sides of the legs, the patellar and popliteal regions, the outer edges and dorsal surfaces of the feet, the back, the loins, the axillae, the folds of the elbows and the outer edges and backs of the hands.

The extent and distribution vary, but the severity of the lesions bears no relation to either. Some cases with very limited distribution present long, coarse spines; others, with widespread lesions, may scarcely come under the group of hystrix, while others are full of bristles and spines.

The face often escapes, but it was affected in the cases reported by Thibierge and by White, and in the subject of this contribution.

The hands and feet may also escape, but they are commonly first and most extensively affected. The hands and feet were particularly affected in the cases reported by Blatvogel; Crocker, in whose case they

were "spiky"; Davies; Deroque, whose patient had deformed digits and associated onychogryphosis, and was therefore helpless; Joseph; Ohmann-Dumesnil; Pettigrew, whose "biped armadillo" had them "like a thickly set brush of horn" on the backs of his hands; Sanders, whose patient's skin was "like porcupine skin, with coarse filiform bristles one and one-half inches long, in places"; Schroup, and White, whose patient's digits, without nails and covered with long spines, were badly deformed.

The genitalia also usually escape, but those of both sexes may be affected. The male patients of Davies, Duckworth, Klonck, Ryan, Thibierge and White all had lesions on the penis, and the female patient (case 2) of Philippson had them on the perineum. The occurrence of the lesions in this distribution may make intercourse impossible, so that the peculiarity cannot be transmitted to other generations. It is not impossible that in the Lambert family the extinction of the disease had this explanation.

Treatment in ichthyosis is only palliative; nothing known influences the general course and progress of the keratinic changes.

The literature on the subject is not extensive, and is divisible into reports of cases, casuistic writings on the subject of keratosis in general and ichthyosis in particular and uncredited illustrations showing cases. In an attempt to gather together all of the reported cases of ichthyosis hystrix, this literature was looked through, hurriedly where it seemed to be unpromising and more carefully elsewhere. There were only two seemingly promising references that it was impossible to review. The result of the search is the collection of fifty-seven cases.

It is an interesting literature and begins two hundred years before the present writing, when the first case to attract medical attention seems to have been that of Edward Lambert, a lad of about 14 years of age, born of healthy parents, farmers, with whom he lived at Euston Hall near Suffolk. His father took him to London to see whether anything could be done for the "peculiar cuticular affection" from which the child suffered. He had been born, the father said, with an apparently normal skin that "without any accident or disease to account for it" began to develop peculiar excrescences—bristles and spines—in the course of about three weeks.

The patient was seen by Mr. John Machin, by whom he was shown to the Royal Society and by whom an account of his disease was published in the *Philosophical Transactions.*

Twenty-four years later, in 1775, Mr. Henry Baker found the patient, now grown to manhood and married, exhibiting himself, together with his little son, under the name of the "porcupine men." He examined them, and published "A Supplement to the Account of a Distempered Skin, Published in the Four Hundred and Twenty-Fourth

Number of the Philosophical Transactions." Mr. George Edwards, librarian of the College of Physicians of London, etched a copper plate of the left hand of the Lambert boy, which was shown by Mr. Baker and used to illustrate his publication.

At the time the man was "nearly 40 years old, well-shaped and good looking, and of a florid countenance, and when his body and hands were covered, seems nothing different from other people. But except his head, face, palms of his hands and soles of his feet, he is all over covered in the same manner as in 1731. He has had six children, all with the same rugged covering as himself. Only one of these is now living, a very pretty boy of eight years, who is in exactly the same condition as his father."

In that year (1755), Ascanius visited London, and on returning to Paris, published a note in which he says, "I was in London last year, and saw with astonishment the 'Porcupine man.' He was born of healthy parents, and has lived in London, upon alms, for about 30 years." He adds that "le Docteur Sloane reporte ce fait dans les Transactions Philosophique, No. 424, pp. 299." There seems to have been such report, and in all probability he meant to refer to Mr. Baker's contribution.

As far as I have been able to follow the Lambert family, an interval of nearly half a century (forty-six years) elapsed during which they disappeared from view, until there was a revival of interest, probably depending on the fact that the grandsons of the original member fell into the hands of a speculator named Joanny, who took them on a continental tour and exhibited them in several countries to the scientists and to others more than casually interested. In Germany, in 1801, they were seen by G. T. Tilesius, who published an account of them in Altenburg in 1802. At that time the grandsons, John and Richard, were aged 22 and 13 years, respectively.

In 1806, J. L. Alibert pictured a hand of one of them, and gave a brief account of them in the text. In it is seen the work of the speculator, Joanny, who seems to have given out manufactured information intended to increase the marvelousness of his specimens. Instead of the simple account of the country boy from Euston Hall in Suffolk, brought to London to see a physician, as was related by Machin and Baker, who knew him through personal contact, it is related seventy-five years later that the grandfather of the youths was a scaly savage from Davis Strait, who was taken to Philadelphia by travelers, married a European woman and had a son as scaly and spiny as himself. "He was called Lambert and went to England where he lived in Euston Hall in the County of Suffolk, serving Lord Huntingfield as huntsman until, when very old, he was killed in the exercise of his duties." Alibert also adds that only males of the family were affected with the disease,

seven sisters all having had normal skins. Mr. Baker says that "he had six children all with the same rugged covering as himself," but says nothing about their sex.

Again there is a long period of silence—almost thirty years. Then in 1833, Pettigrew introduced the "biped armadillo" who he said, was the great-grandson of the original Lambert. At his hands the biography of the ancestor receives some additional embellishments, thus: "The great-grand-father of this man was found by a whaler in Davis Straits in a wild state, and similarly covered (by warty elongations of the papillae of the skin, over the entire surface of his body. On the backs of his hands the eruption forms a thick set brush of horn; on parts much exposed to friction, the points are worn down to form scales). He was taken on board, and christened with the captain's name, Lambert. He was ultimately brought to England, where he begat a son coated in

Generations of the Lambert Family

Report Published	Observed	I Edward Lambert, Sr.*	II Edward Lambert, Jr.	III John and Richard Lambert	IV Unknown Name
1732	Machin	14 years old			
1755	Baker, Edwards	40 years old	8 years old		
1756	Ascanius	41 years old	9 years old		
1802	Tilesius	84 years old	55 years old	22 and 13 years old	
1806	Allbert	88 years old	59 years old	26 and 17 years old	
1932	Pettigrew	114 years old	85 years old	52 and 43 years old	Adult

* Edward Lambert, Sr., the progenitor of the family, had six children; only one lived.

like manner, who again begat his like, and so the generations went on until the fourth, numerous scaly children occurring, the females being born with proper human skins." He adds, "The present man moults once a year."

From this time on there seems to have been no more cases of the disease in the Lambert family, but references to those mentioned occur again and again in the literature.

It will be seen from the accompanying table that there were five well known cases of the disease in four generations of the Lambert family; but Mr. Baker, who was in touch with the progenitor of the family, and so in a position to know, states that Edward Lambert, senior, "had six children, all with the same rugged covering as himself" only one of whom survived and was seen by him, so that five additional cases must be added, making a total of ten cases in the family.

The disease probably received its name of ichthyosis hystrix (hystrix means hedgehog or porcupine) on account of the fact that members of the Lambert family were called the "porcupine men."

CASE REPORTS COLLECTED FROM THE LITERATURE

1-2. Alibert, J. L.: Atlas to his Descriptions des maladies de le peau, Paris, Barrois l'ainé et fils, 1806, plate 38. The cases are those of the brothers John and Richard Lambert, grandsons of Edward Lambert, Sr., and also reported by Tilesius.

3. De Amicis, Tomasso: Di un singolarissimo caso d'istricismo con seborrhea universale (Sauriasis spinosa, Wilson), Gior. ital. mal. ven. e pelle **19**:337, 1884.

Ascanius, M.: Description d'un anglois d'une espèce singulière que l'on appelle communement 'the Porcupine man' ou l'homme porc-épic, Recueil périodique d'observations de méd., chir., pharm., etc., Paris, Jan., 1756, p. 216. This is the same case as reported by Machin, and later by Baker, viz., that of Edward Lambert, Sr.

4. Baker, Henry: A Supplement to the Account of a Distempered Skin, Published in the 424th Number of the Philosophical Transactions, Philosophical Transactions **49**:21, 1755-1756.

5. Bizzozero, E.: Sopra un caso singolare di ittiosi, Gior. ital. mal. vene. e pelle **43**:717, 1908.

6. Blatvogel, W.: Ein Beitrag zur Kenntnis der Ichthyosis hystrix, Dermat. Wchnschr. **74**:1, 1922.

7. Boggs, T. R.: Case of Ichthyosis Hystrix, Bull. Johns Hopkins Hosp. **20**: 150, 1909.

8-9. Bourns, Whitlaw: Two Cases of Ichythyosis Hystrix, Proc. M. Soc. London **10**:253, 1887.

10. Bunch, J. L.: Ichthyosis Hystrix, etc., Brit. J. Dermat. **23**:273, 1911.

11. Butruille: Ichthyosis hystrix nigricans suivant le trajet des nerfs profonds des membres inférieurs, Ann. de dermat., 1887, p. 738.

Crocker, Radcliffe: A Case of Ichthyosis of Unusual Character, Tr. Clin. Soc. London **12**:181, 1879. This seems to be the same case as no. 10.

12. Curtis, F. C.: Ichthyosis Hystrix Congenita, Arch. Dermat. **6**:243, 1880.

13-14. Davies, L. Meredith: Two Cases of Ichthyosis Hystrix in the Same Family, Lancet **1**:713 (March 27) 1920.

15. Derocque, P.: Ichthyosis hystrix, etc., Rev. méd. de Normandie, Rouen, 1900, p. 169.

16. Duckworth: Ichthyosis Hystrix, St. Bartholomew's Hosp. Rep. **9**:108, 1873.

Edwards, George: Mr. Edwards reported no case, but etched the copper plate of the left hand of the patient shown by Mr. Baker and published with his paper in Philosophical Transactions **49**:21, 1755.

Fox, Tilbury: Tr. Clin. Soc. Lond. **12**:181, 1879. This is the same patient as in case 10.

17. Hollender, A. R.: Ichthyosis Hystrix Nigricans, Urol. & Cutan. Rev. **25**: 131, 1921.

18. Hutchinson, J. A.: A Case of Ichthyosis Hystrix, Montreal M. J. **29**:911, 1900.

Hutchinson, Jonathon: Ichthyotic horns, Arch. Surg., 1895, vol. 6, illustration 121. This lithograph of horny growths on the hands was copied from Radcliffe Crocker, and is probably from the same case as no. 10.

19. Joseph, Max: Ein Fall von schwerer Ichthyosis, Berl. dermat. Gesellsch., March 1, 1897; Verhandl. d. Berl. dermat. Gesellsch. **28**:230, 1897; Dermat. Ztschr. **5**:256, 1898; Arch. f. Dermat. u. Syph. **45**:234, 1898.

20. Joseph, Max: Ueber ungewöhnliche Icterusformen, Verhandl. d. deutsche dermat. Gesellsch. **26**:394, 1894; Monatschr. f. prakt. Dermat. **26**:394, 1898.

21. Kaposi: Ein Kind mit excessiven Ichthyosis hystrix, Verhandl. d. Wien. dermat. Gesellsch., Nov. 8, 1893; Arch. f. Dermat. u. Syph. **26**:433, 1894. This was probably the same case that he had previously shown to the Wien. dermat. Gesellsch., June 11, 1890, and published in the Arch. f. Dermat. u. Syph. **23**:148, 1890, and in the Jahresb. der wein. K. K. Krankenanstalt **1**:498, 1892-1893.

22. Klonck, Max: Ichthyosis with a Report of a Case of Ichthyosis Hystrix, Ohio M. J. **7**:145, 1876.

23. Knauer, George: Ichthyosis hystrix, Deutsche Praxis **1**:177, 1898; Internat. photograph. Monatschr. f. Med. Düsseldorf **5**:56, 1898.

24. Kreibich: Ein Fall von Ichthyosis hystrix, Arch. f. Dermat. u. Syph. **45**: 234, 1898.

Lebert, H.: Ueber Keratosen, E. Morgenstern, Breslau, 1864. This is a general paper on the whole subject of keratosis, including ichthyosis, and ichthyosis hystrix. In it he reports no cases of his own, but reviews the literature, and especially the cases of the "Porcupine men."

25. Lenhoff: Ichthyosis hystrix, Berl. dermat. Gesellsch., 1893. Crocker says that Lenhoff exhibited four sisters, two with slight xerodermia, one with well marked ichthyosis, and the other with ichthyosis hystrix.

26. Lukis, C. P.: A Case of Ichthyosis Hystrix (Crocker): Report of the Medical College of Calcutta, Indian M. Gaz. **42**:210, 1907.

27. Machin, John: An Uncommon Case of a Distempered Skin, Philosophical Transactions **37**:534, 1732. This is the first case, the original "Porcupine man."

28. Mansfeldt: Beschreibung einen Ichthyosi cornea spinosa partialis, Arch. f. med. Erfahrung **2**:1, 1822.

29-30. Martin, P. J.: A Case of Hereditary Ichthyosis, Med.-Chir. Tr. Lond. **9**:53, 1818.

31. McConnell, J. B.: Ichthyosis Hystrix, Arch. Dermat. **5**:148, 1879.

32. Neptune, J. W.: Ichthyosis Hystrix, with Report of a Case, Kansas M. J. **1**:75, 1895.

33. Ohmann-Dumesnil: Ichthyosis Hystrix, Internat. Clin. **4**:335, 1897.

Pernet, George: On Ichthyosis Hystrix, Brit. M. J. **22**:332, 1917. This is the same case as no. 10.

34. Pettigrew: The Biped Armadillo, Lancet **2**:146, 1832.

35-36. Philippson, L.: Zwei Fälle von Ichthyosis (hystrix) cornea, Monatschr. f. prakt. Dermat. **11**:337, 1890.

37. Pierpont: Case of Ichthyosis Sauriderma Spinosum, Proc. Connecticut M. Soc., 1867; **3**:162, 1871.

38. Ryan, J. P.: Note of a Case of Ichthyosis Hystrix, Australian M. J. **15**: 276, 1893; also Intercolonial M. J. **2**:298, 1897.

Sanders: A Case of Ichthyosis Hystrix, Edinburgh M. J. **24**:66, 1880-1881. This appears to be case 10.

39. Scholtz, Moses: Ichthyosis Hystrix or Ichthyosis Nigricans, Lancet-Clinic **115**:483, 1916.

40. Schroup: Ueber Ichthyosis hystrix, Dermat. Zentralbl. **1**:242, 1897-1898.

41-42. Selenew, J. F.: Exudate und Keratosen: Fall von Ichthyosis hystrix bullosa, Dermat. Ztschr. **12**:571, 1905.

43. Thibierge: "Cas extraordinaire d'ichthyose généralisé avec altérations des muqueses bucale et nasale, Ann. Soc. de dermat. et syph., 1892, p. 717.

Tilesius, G. T.: Beschreibung und Abbildung der beiden sogenannten Stachelschwein Menschen aus der bekannten englischen Familie Lambert oder Porcupine Men, Altenburg, 1802. These are the same two cases considered by Alibert, and pictured in his Atlas, the grandsons of the progenitor of the Lambert family, Edward Lambert, Sr.

44. Trimble, J.: Ichthyosis Hystrix, J. Cutan. Dis. **37**:343, 1919.

45. White, C. J.: Ichthyosis Hystrix, J. Cutan. Dis. **30**:293, 1912.

In addition to these reported cases, there are numerous illustrations of cases seemingly not otherwise published, appearing in textbooks. From this source the following have been collected.

46. Aschoff, L.: Pathologische Anatomie, Jena, Gustav Fischer, 1909, vol. 1, p. 494.

47. Hebra, F.: Atlas, London, New Sydenham Society, 1866-1880, part 3.

48. Sequeira, J. H.: Diseases of the Skin, Philadelphia, P. Blakiston's Son & Company, 1911, p. 23.

49. Strickler: Diseases of the Skin and Syphilis, Philadelphia, F. A. Davis Company, 1927, p. 483.

50. Sutton, R. F.: Diseases of the Skin, St. Louis, C. V. Mosby Company, 1928, p. 487.

51. Stelwagon, H. W.: Diseases of the Skin, Philadelphia, W. B. Saunders Company, 1905, p. 535.

If to these be added the five children of Edward Lambert, Senior, of whom we have no other information than that given by Baker, that "He has had six children, all with the some rugged covering as himself"—and as Baker had the man before him for examination both physical and interrogative, there can be little doubt of the correctness of his statement—the total number of cases that I have been able to collect rises to fifty-six.

To these a new case in a Chinese is added, making the total number of cases fifty-seven.

Correspondence

"FAMILIAL XANTHOMA"

To the Editor:—In their article on familial xanthoma appearing in the ARCHIVES for April, 1930, p. 642, Wile and Duemling in the review of the literature on the subject quote Arzt's conception of a case as follows: "McDonagh recorded an unusual case of xanthoma in a 5 months old infant. The lesions were first noticed fourteen days after birth. The mother said that she was born with a similar eruption, which persisted until her fourteenth year, and then disappeared spontaneously."

In reading McDonagh's report of the foregoing case, which was one among a total of five, one is struck by the citation of a number of facts at total variance to the quotation. In his cases, although the lesions on clinical examination closely resembled those of urticaria pigmentosa, biopsy and microscopic examination disclosed that they were definite new growths, in fact endotheliomas. He designated them nevoxantho-endotheliomas because of their appearance at birth or shortly thereafter, because their color, size and consistency rendered them indistinguishable from xanthomas, and because the cells making up the body of the small tumors were endothelial (McDonagh, J. E. R.: A Contribution to Our Knowledge of the Naevo-Xantho-Endotheliomata, *Brit. J. Dermat.* **24**:85, 1912).

Wise reported a similar case, which on clinical examination had been diagnosed as urticaria pigmentosa or xanthelasmoidea, but which on microscopic study proved to be nevoxantho-endothelioma (Wise, Fred: Endothelioma Cutis, *Am. J. M. Sc.* **157**:236 [Feb.] 1919).

A similar case with definite microscopic observations indicative of endotheliomas has been described and reported by Jacoby and myself (Jacoby, R., and Grund, J. L.: Endothelioma Cutis: Naevo-Xantho-Endothelioma; Report of Case, *New England J. Med.* **202**:1247 [June 26] 1930).

In view of the preceding data, it is obvious that Arzt's inclusion of McDonagh's case in the category of xanthoma is an erroneous procedure. Further, the necessity of microscopic examination previous to the definite labeling of these and clinically similar cases is obvious.

J. L. GRUND, M.D., Boston.

Dr. Wile's comment on Dr. Grund's letter is that "it would seem to me that his point is well taken, that the case of McDonagh's probably was one of nevoxantho-endotheliomas rather than of familial xanthoma."

Abstracts from Current Literature

METAPHEN AS A GERMICIDE AND SKIN DISINFECTANT. G. W. RAIZISS, MARIE SEVERAC and J. C. MOETSCH, J. A. M. A. **94**:1199 (April 19) 1930.

Using as a basis the complete sterilization of infected skin of rabbits, various popular antiseptics were studied as to efficiency. Metaphen proved to be the most efficient. Ethyl alcohol failed to produce complete sterilization. Hexylresorcinol (S. T. 37) gave growths of bacteria in all tests. Acriflavine base in 2 per cent concentration was 80 per cent effective. A 5 per cent solution of iodine was ineffective, but a solution of 7 per cent was effective in 88 per cent of cases. A 2 per cent mercurochrome-220 soluble-alcohol-acetone-water solution showed only 79 per cent efficiency, whereas an aqueous solution of metaphen, 1:2,500, showed complete sterilization in all the tests performed. Metaphen is mercuri-4-nitro-2-cresol.

RATTNER, Chicago.

NEVUS PIGMENTOSUS ET PILOSUS VERRUCOSUS: ITS REMOVAL BY MEANS OF ELECTROCOAGULATION. E. K. STRATTON, J. A. M. A. **94**:1233 (April 19) 1930.

A photograph showed a satisfactory result in an extensive nevus on the face treated by electrocoagulation. The patient was treated in five stages over a period of four years, always under anesthesia.

DIPHTHERIA OF THE PENIS. ARCHIBALD L. HOYNE and A. J. LEVY, J. A. M. A. **94**:1395 (May 3) 1930.

The patient, aged 7 years, had been circumcised when an infant. There was an associated oral diphtheria. The authors could not determine whether the involvement of the penis occurred simultaneously or immediately following the oral diphtheria. There was complete recovery following the use of antitoxin.

THE CURE OF BASAL CELL EPITHELIOMA. BERNARD F. SCHREINER and REINHARD C. WENDE, J. A. M. A. **94**:1475 (May 10) 1930.

This is a report of the end-results in 355 cases in which the patients were treated five or more years ago. Irradiation yielded primary healing in 88 per cent of all cases. The favorable cases in which the patients were treated by irradiation yielded primary healing in 95 per cent. Even in the far advanced cases there was primary healing in 39 per cent. The authors are convinced that with proper cooperation on the part of physicians and the intelligent laity, the percentage of cures should be more than 95. The authors use Hazen's classification of cancer of the skin. They discuss briefly the pathology, the favorable and unfavorable sites with respect to treatment and the various forms of treatment. There are several excellent photographic illustrations.

A CASE OF SKIN SENSITIVITY TO PARTHENIUM HYSTERAPHORUS. S. W. FRENCH, Mil. Surgeon **66**:673 (May) 1930.

The patient presented a typical dermatitis venenata caused by the plant commonly called "Mexican birdseed weed." Desensitization was effected by an extract made from this plant. "Mexican birdseed plant" is not included in the list of cutaneous irritants compiled by Weber (ARCH. DERMAT. & SYPH. **21**:5 [May] 1930).

"Ainhum." H. P. Makel, Mil. Surgeon **66**:693 (May) 1930.

This is a good, brief, textbook consideration of the entity ainhum.

Rattner, Chicago.

Some Observations on the Causation of Erythema Exudativum Multiforme (Hebra). Edwin Ramel, Brit. J. Dermat. **42**:1 (Jan.) 1930.

Ramel discusses the rôle of *Streptococcus hemolyticus* in the etiology of erythema multiforme, with references to the literature, and states that he cannot accept the streptococcal theory as an explanation of the etiology. He gives a résumé of the facts previously published by him, in which the Koch bacillus was demonstrated both in the blood (eight cases) and in the lesions (two cases). The present paper deals with four unpublished cases of erythema multiforme which showed a tuberculous bacillemia at the period of onset of the eruption, which was demonstrated by the method of successive inoculations. Detailed reports of the four cases are presented, together with full descriptions of the autopsy observations in the guinea-pigs after each passage of the infection.

A résumé of each case, together with a discussion of the observations in the four cases, is presented, and Ramel summarizes his article as follows: 1. The presence of a tuberculous septicemia has been demonstrated in four cases of idiopathic erythema exudativum multiforme. The cases in question presented no obvious manifestations of tuberculosis. The erythema exudativum multiforme of Hebra is therefore considered to be a nonfollicular type of cutaneous, tuberculous manifestation of hematogenous origin. 2. The tuberculous virus that is the cause of idiopathic erythema multiforme produces only attenuated lesions on guinea-pig inoculation. The animal does not die spontaneously; it merely acts as a carrier of organisms. An inoculation chancre is not produced. The resulting lesions, however, must be tuberculous, for their successive reinoculation into other animals brings about a progressive exaltation in the virulence of the virus after from two to four passages. In addition, the number of acid-fast bacilli found in the lesions increases, and ultimately they may be isolated in culture. 3. Erythema multiforme develops spontaneously, as a rule, and up to the present time this type of eruption has been classified as idiopathic. In other cases a variable determining factor, either physicochemical, toxi-infectious or physiologic precipitates the onset of the eruption. This provocative process is biotropic. A case of erythema multiforme following an erythema solare is reported as illustrative of this phenomenon. The factors determining the onset of erythema multiforme have hitherto been wrongly considered as its cause, and the term "secondary erythema multiforme" has been applied to these cases. Such a type, however, does not exist, and cases which are designated as such either belong to the class of provoked erythema multiforme, or comprise eruptions which have no etiologic or clinical connection with Hebra's erythema. Four photographs and two microphotographs accompany the article.

Conjunctivitis as a Trichophytide Manifestation. I. Muende, Brit. J. Dermat. **42**:26 (Jan.) 1930.

A case is described in a boy, aged 10, who had a tineal infection of the scalp with associated lesions on the neck and body. The trichophytin reaction was almost negative. Sixteen days after roentgen epilation, a generalized, varicelliform trichophytide and an acute conjunctivitis that simulated Calmette's reaction as seen in scrofulous patients developed. Both subsided within fifteen days, but there followed in about eight days another generalized eruption of urticarial type, but the conjunctivae remained free. The trichophytin reaction made two days after the appearance of the second eruption was strongly positive and there was a focal reaction. The body lesions assumed the characteristics of lichen trichophyticus and another area of infiltration with pus formation on the scalp developed.

Muende concludes that conjunctivitis may develop as an allergic phenomenon in association with a generalized trichophytide in a patient with a deep-seated, inflammatory trichophyton infection, just as it does in a tuberculous patient.

NEVUS ACNEIFORMIS UNILATERALIS. K. G. COLQUHOUN, Brit. J. Dermat. **42**: 55 (Feb.) 1930.

A case is described in a girl, aged 17, who first presented signs of the condition at the age of 2 years, when several discrete pustules were noted in the middle of the left upper arm which healed leaving scars. Subsequently, comedones developed around the original site and the inflammatory process extended so as gradually to involve the greater part of the outer portion of the upper arm and suprascapular region, embracing the sensory distribution from the fourth, fifth and sixth spinal segments. Simple comedones, easily expressed, and larger ones that left pitted scars when expressed were noted. Suppurative changes in the sebaceous collections, which are painful when acute, discharge a purulent material when the lesion has matured and after the crust separates leave smooth, oval depressed scars, were described. The literature pertaining to this condition is reviewed briefly. An excellent photograph is presented illustrating the location and character of the process.

THE TREATMENT OF RINGWORM OF THE SCALP WITH THALLIUM ACETATE. G. H. PERCIVAL, Brit. J. Dermat. **42**:59 (Feb.) 1930.

The results of thallium medication in fifty cases of ringworm of the scalp are presented. The drug was administered orally in a single dose of 8.5 mg. per kilogram of body weight, followed by the daily application of a 10 per cent sulphur ointment to the scalp. When a good regrowth of hair had taken place, local treatment was suspended for three weeks, at the end of which time the scalp was examined for any evidence of disease. Successful epilation of the scalp occurred in every case in from seventeen to twenty-two days after the administration of the drug. Toxic symptoms occurred between the third and twenty-eighth day in 44 per cent of the cases, and lasted from two to nineteen days. In no cases were the symptoms severe and few of the patients were even confined to bed. No age period was specially liable to show toxic symptoms. The author feels that the thoroughness of local treatment during the period in which the scalp is completely bald is of first importance in the ultimate cure of the disease, a cure being obtained in 96 per cent of the cases reported here. The local treatment was carried out daily by skilled nurses. The shortest period necessary to obtain a cure was sixty-three days from the date of giving the drug; the longest period was 148 days, and the average period was 107 days. The administration of thyroid extract and calcium chloride, respectively, in two cases did not in any way interfere with the depilating action of thallium, and the calcium content of the serum was found to remain within normal limits following the administration of thallium. A critical discussion of the special action of thallium on the growth of hair, with references to the literature, concludes the article.

WIEN, Chicago.

THE HEREDITARY FACTOR IN ASTHMA AND OTHER ALLERGIES. GEORGE W. BRAY, Brit. M. J. **1**:384 (March 1) 1930.

Too hundred asthmatic children were investigated with regard to sex incidence, age at onset of asthmatic symptoms, and the presence or absence of allergy in other members of their families. The author then compares his results with facts established by other workers. These facts are:

1. The allergic diathesis is transmitted as a mendelian dominant.
2. The greater the hereditary, the earlier are symptoms manifested.

3. The earlier in life the individual becomes sensitive, the greater the tendency to multiple sensitization.

4. Asthma, hay-fever, eczema, urticaria, angioneurotic edema and migraine appear to be intimately correlated, and to be interchangeable.

5. A child born in a family with a pure hay-fever lineage is much more likely to be affected with hay-fever than with asthma, and vice versa.

6. Where several members of one family are affected, sensitization is not identical as regards the specific proteins, nor are the clinical types of allergy or the symptoms displayed in each type themselves identical in different members of the same family.

The main additions deduced from the author's study are:

1. Puberty must exert some beneficial effect on the symptoms in the male and, or, deleterious effect on the female, for before puberty the incidence of males to females is over 2:1, afterward less than 1:1.

2. Heredity plays very little part in determining the age at onset of symptoms during the first decade.

3. Transmission appears to be twice as frequent through the female as through the male for the following reasons:

a. When there is a unilateral family history, it is twice as frequently on the mothers side as the fathers.

b. When the parents are unaffected, the transmitter is twice as often the female.

c. When the male is unaffected and the female has or may transmit the tendency, twice as many are affected with allergy as when the male is affected or is a transmitter and the female is quite free.

4. A positive family history of allergy is present in about 70 per cent of cases of asthma in children—in over 50 per cent unilateral, in nearly 20 per cent bilateral; 10 per cent appears to be the maximum incidence in the families of presumably normal persons.

THE MODERN TREATMENT OF LUPUS ERYTHEMATOSUS. H. HALDIN-DAVIS, Brit. M. J. **1**:432 (March 8) 1930.

The author enthusiastically endorses the treatment of lupus erythematosus by means of gold compounds. He uses small doses to begin with, and to forestall toxic reactions he gives his patients dextrose a few hours before injections. This prevents in part, fixation of the gold compound in the liver cells.

CASE OF SCLEREMA NEONATORUM. E. CONDON, Brit. M. J. **1**:443 (March 8) 1930.

The infant was born prematurely, while the mother was suffering from pneumonia. It is interesting to note that though the mother made a rapid recovery, lactation never appeared. The infant died in a few days.

SPONTANEOUS INOCULATION OF MELANOTIC SARCOMA FROM MOTHER TO FOETUS. F. PARKES WEBER, E. SCHWARZ and R. HELLENSCHMIED, Brit. M. J. **1**:537 (March 22) 1930.

A woman suffering from melanotic sarcoma was delivered three months before her death of a child who appeared at first to be healthy. When 8 months old, the child entered the hospital with an enlarged liver on which masses were palpated. These were later found to be melanotic tumors. With increasing cachexia, the child died two months later, minute nodules having developed beneath the skin shortly before death. The primary disease was apparently in the liver. At the time of birth, the placenta was infiltrated with masses of melanotic growth.

The authors feel that the tumor cells must have passed from the mother through the placenta into the fetal blood stream. The blood in the umbilical vein having chiefly to circulate through the liver, some of the melanotic cells were caught up in the hepatic capillaries, and these cells were the parents of the melanotic tumors. This is probably the first report of a case of congenital malignant tumor due to intra-uterine inoculation of the fetus by the passage of malignant tumor cells from the placenta to the child by way of the umbilical vein. There have been many published examples and different varieties of inherited constitutional predisposition to malignant neoplasms, but the authors feel that their case is not of this sort.

THALLIUM ACETATE AS A DEPILATORY IN RINGWORM OF THE SCALP. H. MCCORMICK MITCHELL, Brit. M. J. **1**:589 (March 29) 1930.

The writer has treated seventy-four patients, sixty-three of whom were 5 years old or less, the remaining between 5 and 8 years. Ten of his patients suffered recurrences and required second doses. He attributes the failures to the fact that he gave 8 mg. per kilogram of body weight whereas now he prescribes 8.5 or 9 mg. The larger dose is given to children with dark hair, and to those with involvement of the hairs of the crown, both of which conditions make depilation more difficult. The after-treatment is important; the patients should be kept in bed for forty-eight hours after taking the drug, and from the first day of treatment the scalp should be washed daily with 10 per cent sulphur soap, and a fungicide application should be rubbed in. Examination with the ultraviolet beam should be made after depilation is apparently complete, in order to detect any infected stumps which fail to fall out. He has seen no serious toxic reactions.

HERPES OPHTHALMICUS COINCIDENT WITH VARICELLA IN ADULTS. B. BARLING and JOHN CAHILL, Brit. M. J. **1**:823 (May 3) 1930.

Two cases were cited. One was in a man, aged 69; the other occurred in a man, aged 80. Neither patient had ever had chickenpox. There was no history of previous exposure.

RATTNER, Chicago.

PITYRIASIS LICHENOIDES ET VARIOLIFORMIS ACUTA. CASE REPORTS. A. C. ROXBURGH, A. M. H. GRAY, G. B. DOWLING and J. E. M. WIGLEY, Proc. Roy. Soc. Med. **23**:351 (Jan.) 1930.

Three men, aged 26, 24 and 15 years, and one girl, aged 5 years and 9 months, presented eruptions that closely resembled each other. There was an eruption on the trunk, arms, thighs, legs and feet, consisting of five types of lesions; (1) macular pink or yellowish-pink spots ranging in size from that of a large pinhead to that of a pea; (2) slightly raised papules of about the same size; (3) papules covered by a squama; (4) papules with hemorrhage in the center, or hemorrhagic scab; (5) papules in the healing stage, with a depressed scar, from which a scab had separated. Only a few of the lesions developed central hemorrhage necrosis. Section taken from a lesion from which a hemorrhage scab was separated showed patchy cellular infiltration throughout the dermis, extending down to the level of the sweat glands, and somewhat densely aggregated around them, elsewhere for the most part around vessels. Polymorphonuclear leukocytes were found in numbers in the infiltrate. A hemorrhage scab could be seen over a regenerating epidermis. The cases resembled parapsoriasis and were subjectively asymptomatic, but cleared up within from four to six months. In one case 4 :amino-2-auro-thiophenol carbolic acid was employed successfully. Reference was made to Mucha as the author who first described the condition.

NORWEGIAN SCABIES. G. B. DOWLING, Proc. Roy. Soc. Med. **23**:355 (Jan.) 1930.

A woman, aged 29, about 9 months before examination first noticed that the toe-nails were becoming thickened. Ultimately, the thickness increased to a degree which made walking in shoes almost impossible. The changes in the nails were accompanied by horny thickening on the undersurface of the metatarsophalangeal joints, and a mildly irritable papular eruption between the toes and on the adjacent portion of the dorsum of the feet. A similar eruption appeared in the interdigital spaces of the hands and about the wrists, and a few papules were present on the forearms and the legs. The upper arms, thighs and trunk were not attacked. All of the toe-nails were thickened and crumbling. Hyperkeratotic masses were also present on the ball of each foot. A piece of friable toe-nail was removed for examination for fungus with negative results. All of the toe-nails were then removed and sent to the laboratory for further examination. Dr. Elworthy reported an infection of the nails and epidermis with a member of the family *Sarcoptidae*. He prepared microscopic specimens which, to quote his description, showed "adults with some pregnant females, nymphs, developing ova, and empty shells occurring in variable numbers, usually large, in different parts of the diseased nails and cuticles." With the help of an entomologist, an attempt was to be made to classify the parasite.

GUY, Pittsburgh.

A NEW AUSTRALIAN GERMICIDE. E. MORRIS HUMPHERY, M. J. Australia **1**:417 (March 29) 1930.

A new essential oil extracted from a variety of tea tree, the *Melaleuca alternifolia*, was found to be thirteen times stronger than phenol. After an adequate clinical test in cases of skin wounds, paronychia, throat infections and vaginal infections, it was found to be efficient, nontoxic and nonirritant.

RATTNER, Chicago.

BENIGN APONEUROTIC SCLEREMA (SCLEREDEMA OF BUSCHKE). C. AUDRY and J. GADRAT, Ann. de dermat. et syph. **1**:161 (Feb.) 1930.

This disorder was described first by Buschke in 1902. The case reported is the twenty-fourth to be published since then.

A man, aged 68, suffered for some months from an infiltration of the skin of the legs and thighs. There was no pigmentation or atrophy. The skin was superficially fissured and scaly. There was no pain on pressure. Pitting, however, followed. The feet were unaffected. The patient had syphilis with neurologic symptoms. There was a rapid amelioration of the cutaneous disorder on the administration of potassium iodide.

The case is an example of a clinical syndrome that merits recognition. The authors believe that the title "benign aponeurotic scleredema" is better than Buschke's original designation. The etiology is unknown and is probably multiple; infections, pyrexia and perhaps syphilis have been incriminated. Histologically, there is no characteristic feature. It is probable that the disorder is based on an incretory disturbance, but the usual spontaneous recovery shows that this is fugacious.

A NEW REACTION IN SYPHILIS. SYMPATHETIC ROENTGEN THERAPY WITH A "LEUKOCYTE REACTION." J. GOUIN, H. A. BIENVENUE and P. DAOULAS, Ann. de dermat. et syph. **1**:168 (Feb.) 1930.

The new reaction reported is the outcome of observations made by the authors during their investigations of sympathetic irradiation.

Roentgen therapy produced a leukocytosis or leukopenia according to the mode of irradiation. The authors injected the blood of the irradiated subject into a nonirradiated recipient to determine whether any of its properties acquired by

irradiation were transmissible. A leukocyte count, before and after irradiation and injection of the blood, was done. The observations are tabulated case by case, and according to the region irradiated and the technic employed in the irradiation. Likewise, they studied the leukocytic reaction after autohemotherapy, heterohemotherapy, and injections of neoarsphenamine, mercury and bismuth into syphilitic and nonsyphilitic persons.

In syphilitic patients, they encountered regularly an immediate leukocytosis after the injection of the blood of an irradiated person, after autohemotherapy and hemotherapy and injection of antisyphilitic remedies. In their experience, syphilitic persons differ from all others by an immediate leukocytosis after the foregoing procedures. However, control investigations of a number of other infectious diseases were not done. With this reservation, the authors present this reaction (the "leukocyto reaction") as useful and specific.

In practice, the reaction should be determined only after autohemotherapy and injection of antisyphilitic drugs because these are more practical and active than the other measures.

The reaction should be done when the serologic tests give negative results. The authors have always found it positive when the usual tests gave positive results, and nearly always present when the others were negative, as in recent, latent or tertiary syphilis.

THE PROBLEM OF WASSERMANN-FAST SYPHILIS. E. SCHULMANN and G. LÉVY, Ann. de dermat. et syph. **1**:196 (Feb.) 1930.

The authors define as Wassermann-fast those cases in which that reaction remains positive for at least two years, despite intensive treatment with maximum doses of the various antisyphilitic remedies. All clinical signs of the disease, particularly those of the neuraxis, must be absent. The spinal fluid must be normal.

The authors have seen twenty-three cases which answered these requirements. They discuss the cases showing variable Wassermann reactions which constitute partial or sometimes premonitory forms of Wassermann-fast syphilis. Theoretically, irreducible Wassermann reactions may result from various factors; the parasite, the type of lesion, a serologic (physico-chemical) state, the immunologic condition and the treatment may be responsible separately or together.

The frequency of Wassermann-fast cases is unknown, as no satisfactory statistics are available. Opinions about the prognosis of Wassermann-fast cases vary considerably. The authors believe that it is dangerous to stop surveillance of these cases. The patients need not be treated energetically, but treatment should be sufficient to prevent any activity of the focus responsible for the irreducible test. Many methods have been proposed to reduce the Wassermann reaction to negative in these cases; among them, temporary cessation of treatment, desensitization and shock therapy have given satisfactory results in some reported cases.

THE VASOMOTOR-PSYCHIC THEORY OF VERRUCA AND CONDYLOMA ACUMINATUM. J. BONJOUR, Ann. de dermat. et syph. **1**:209 (Feb.) 1930.

The author has treated these lesions by suggestion for many years. All patients are curable by this means. His studies show that effective suggestion produces a lowering of diastolic blood pressure, and he believes that this effect is responsible for the disappearance of warts and condyloma acumination when psychotherapy is successful.

Bonjour rejects the contagious (virus) origin of warts; he believes that they are of psychic origin. He has produced warts on designated areas by suggestion.

As to diastolic pressure, he has found that disappearance of these lesions is associated with its reduction. This causes a decongestion of the papilla, which is followed by a disappearance of the papillomatosis. Conversely, warts appear when the diastolic pressure is higher than normal. This is produced by psychic causes.

THAT WHIRLIGIG, THE ETIOLOGY OF ECZEMA. R. SABOURAUD, Ann. de dermat. et syph. **1**:257 (March) 1930.

In a reminiscent mood, Sabouraud discusses this puzzle. His thoughts were instigated by a remark of Milian, who in a recent discussion on a case of allergy caused by a yeast preparation remarked that "practically all cases of eczema arise directly or indirectly from a surface infection." Such remarks only repeat what has been said years before, and which gave rise to so much contention.

As to the etiology of eczemas, theories continue to dance about it; the fact that evokes these theories is immutable. That fact is that of a number of people exposed to the same irritant under the same conditions only one or a few develop eczema. Words like diathesis, idiosyncrasy and anaphylaxis denote the fact, but they do not explain it. They are a species of jargon. Nothing has been proved, and many questions remain unanswered. When one can explain why some skins are sensitive to sulphur, or other chemicals, much of eczema will be comprehended.

A THEORY OF ALLERGY OF THE SKIN. E. LEHNER and E. RAJKA, Ann. de dermat. et syph. **1**:261 (March) 1930.

The study of allergy has been greatly advanced since methods have been introduced for the production of artificial sensitization. The authors, with their method of depot injections, are able to sensitize any one to a chosen one of a number of substances. With daily injections into the same site, sensitization develops after about the fourth or fifth injection and is manifest when the allergen, introduced near the site of previous injections, provokes an inflammatory reaction in the prepared area. If the experiment is continued, a general sensitivity develops.

The authors have been successful with tuberculin, luetin and other biologic products, but not with some well defined chemical substances, such as morphine, atropine and histamine. But when these substances are mixed with autogenous serum, success is obtained. Mixtures of these with nonproteins (cholesterin, dextrose) also gave positive results.

In continuing their researches (passive transfer to human beings and to the rabbit's ear), the authors have discovered features of allergy, which in conjunction with the work of Lewis and his pupils allow a new insight into the allergic process and permit a new theory.

To begin with, they have found that all inflammation is effected by the interplay of the noxious substance with an intermediate substance. This intermediate substance is present in all organisms and is nonspecific. In an allergic inflammation there is, in addition, reagin, which is specific and acts as an intensifier of the reaction. Besides reagin, the authors have found another specific substance, called by them, dereagin, which neutralizes reagin. Negative and positive allergic phases are explainable by the varying quantity of reagin and dereagin. The presence of these substances is demonstrated optimally from ten to thirty minutes after the allergic reaction.

THE TREATMENT OF VARICOSE ULCERS WITH ACETYLCHOLIN. I. DAINOW, Ann. de dermat. et syph. **1**:270 (March) 1930.

With former methods of treatment, there were about 30 per cent failures. Among the more recently introduced methods, insulin by topical application has proved of some value, but it has been shown that it was not the insulin but the acidity of the menstruum which produced the results. Periarterial sympathectomy, likewise, produces many successes, but has the disadvantages that its effects often wears off before healing is complete and that the operation is not unattended with serious risks. The author employed acetylcholin because it is a vasodilator, produces no ill effects in effective doses and has no contraindications. He uses daily doses of from 0.05 to 0.1.

Eighteen cases are reported, in which seventeen patients were cured. Complete cicatrization was obtained within from four to forty days. Adjuvant treatment consisted of ordinary antiseptic dressings and rest.

THE MODERN TREATMENT OF ACNE VULGARIS. A. E. MARCOGLOU, Ann. de dermat. et syph. **1**:283 (March) 1930.

The author, after a sojourn in America, calls attention to and praises the treatment for acne in most favor with us, namely, roentgen irradiation with MacKee's technic, and attention to systemic disturbances.

HUTCHINSON'S TEETH: MORPHOLOGY, ASSOCIATIONS AND PATHOGENESIS. C. AUDRY, Ann. de dermat. et syph. **1**:291 (March) 1930.

Audry adds some remarks to an article published by him in the same journal (**9**:737, 1928). He has seen about forty instances of this malformation, always in congenitally syphilitic subjects. The so-called Hutchinson's triad seems to be a rare coincidence, noted by him in only three or four of his cases.

He observed one case in which the incisors were quadrangular, convergent and possessing a thin plate of enamel on their edges. In another case, typical Hutchinsonian incisors were markedly displaced. The deformities that he has noted of both lateral and central incisors lead him to believe that the embryologic defect which produces this malformation is determined in the earliest days of the embryo.

PYODERMA CHRONICUM ABSCEDENS ET SUFFODIANS. W. J. MRONGOVIUS, Ann. de dermat. et syph. **1**:295 (March) 1930.

The author reports an unusual case of extensive pyoderma occurring in a man, aged 53. During the course of three years, the disease had spread from the face, over the neck to the chest and the back. The earliest lesion was a firm nodule which softened, spread subcutaneously and became pustular. The skin was riddled with these lesions, in all stages of evolution and involution. Cachexia finally ended in death. Autopsy gave no indications of tuberculosis and other investigations failed to reveal the etiologic agent. With due consideration of certain pyodermic disorders (acne conglobata, etc.), the author regards his case as worthy of a special title.

A RARE FORM OF LUPUS ERYTHEMATOSUS OF THE SCALP. R. SABOURAUD, Ann. de dermat. et syph. **1**:361 (April) 1930.

Sabouraud describes a variety of lupus erythematosus of the scalp that he believes has not been previously recorded. His patient was a woman, aged 50, who had an irregular, patchy alopecia. The pilous orifices were plugged with an adherent horny cone. There were no other cutaneous lesions. The condition disappeared after applications of carbon dioxide snow. Several years later the patient returned with a larger patch in the scalp exhibiting more typical aspects of lupus erythematosus. Horny plugs were present under the cretaceous scale.

A CASE OF ATYPICAL ERYTHEMA MULTIFORME. F. KOGOJ, Ann. de dermat. et syph. **1**:364 (April) 1930.

The author describes a case in which the cutaneous lesions corresponded morphologically to those of erythema multiforme, but which persisted for several months. New lesions constantly appeared and no impression was made on the process by therapy. The patient gave a strong local reaction to streptococcus and staphylococcus. An isomorphic reaction (isomorph Reizeffekt-Kreibich) was demonstrable with various stimuli.

Kogoj discusses the relationship of his case to the different examples of erythema perstans (Darier, Wende, etc.) that have been published. None of these

are satisfactory niches in which to insert his case. The probability was that the patient had a focal infection located in the appendix.

TWO CASES OF ALOPECIA AREATA TREATED BY STIMULATING INJECTIONS OF MILK. M. DJORITCH, Ann. de dermat. et syph. **1**:372 (April) 1930.

On account of the disadvantages of application of various types of stimulating treatment (ultraviolet light, etc.) in alopecia areata, the author tried intradermal injections of milk at the site of the lesions. In two obstinate cases this procedure, repeated in two weeks, was followed by a rapid return of hair.

FAVUS OF THE GLABROUS SKIN AND MUCOUS MEMBRANES. C. ILIESCO and S. LONGHIN, Ann. de dermat. et syph. **1**:376 (April) 1930.

The authors report a microscopically and culturally proved case of generalized and mucous membrane favus. The skin eruption was profuse; the mouth showed various sized ulcerations on the cheeks, tonsils and palate. The ulcers were covered by an easily detached dull yellow membrane. The scalp had been infected for fifteen years.

The treatment, which produced a cure in four months, consisted of epilation of the scalp with the roentgen ray, the application of tincture of iodine to the skin and 30 per cent compound solution of iodine for the mouth. The infecting organism was *A. schoenleinii.*

NEURODERMATITIS (BROCQ) OR INFECTIOUS LICHENIFICATION. P. B. PHOTINOS, Ann. de dermat. et syph. **1**:387 (April) 1930.

Photinos discusses briefly the various theories of the etiology of this disorder. He has investigated eight cases, in all of which streptococcus was found. While he thinks that the streptococcus was responsible for the lesions in his cases, he admits that objection may be taken to this, as streptococcus has been found on normal skin. However, this organism is not constantly present; the latest investigation by his brother (T. Photinos) gave 64 per cent of positive results. Another point in favor of the microbic origin of these cases is their favorable response to applications of dilute iodine.

(Recently, Jordan [*Arch. f. Dermat. u. Syph.* **159**:152, 1929] investigated the presence of streptococci on normal skin, using the pipet method, and he cultivated that organism from every person examined, 148 in all. It was merely a question of getting sufficient material from scattered, large areas. J. C. M.)

DELAYED OSSIFICATION IN CONGENITAL SYPHILIS. G. J. LANDA and V. P. PANOW, Ann. de dermat. et syph. **1**:403 (April) 1930.

The authors compared the evolution of ossification of the wrist (by roentgenograms) with that of normal wrists. In syphilis they found a definite retardation of ossification in about 60 per cent of the cases. Their results show the definite dystrophic influence of the disease on ossification, even in infants without clinical or serologic signs of syphilis, but born of syphilitic parents. Since retarded ossification occurs in other diseases, it cannot be considered as a certain diagnostic sign of syphilis; but in the more marked instances of delayed ossification it is an indication of decided significance.

SOME CONSIDERATIONS OF CHANCROID. W. E. COUTTS, Ann. de dermat. et syph. **1**:408 (April) 1930.

Among 14,182 persons registered for venereal disease in Chile, there were 941 cases of chancroid, of which 880 occurred in men and 61 in women (14:1). In Santiago alone the proportion was 28 men to 1 woman. Coutts thinks that the reason for this disproportion between the sexes is caused by the painfulness of chancroids inhibiting intercourse in women.

MICHAEL, Houston, Texas.

LYMPHADENOTIC PRURIGO, ASTHMA AND ACID-BASE DISEQUILIBRIUM. L. SPILLMANN, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**:10 (Jan.) 1930.

A man, aged 54, who had been afflicted with asthma, developed an almost universal marked lichenification (pachyderma) and pronounced inguinal and axillary adenopathy. Radiotherapy of the splenic area produced amelioration, but the amelioration was simultaneous with a renewal of asthmatic attacks.

Examination showed an alkalosis. He was given a phosphoric acid preparation which resulted in complete relief from the asthma but had no effect on the skin manifestation.

This seems to prove that the asthma and skin disease were provoked by different causes.

SURGICAL DIATHERMY IN DERMATOLOGY. L. SPILLMANN and J. L. CRÉHANGE, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**:17 (Jan.) 1930.

The authors have found this method valuable. They use it in lupus vulgaris and erythematosus, tuberculosis verrucosa cutis, telangiectases, verruca and papillomas, keloids and acne keloid. They state that desiccation of a few lesions of verruca plana juvenilis habitually leads to the disappearance of the remaining lesions. (Occasionally, this happens, but not habitually, in my experience. J. C. M.)

AN AMBULATORY TREATMENT FOR VARICOSE ULCERS. L. SPILLMANN, FLORENTIN and AUBERT, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**:18 (Jan.) 1930.

The authors use an ointment of zinc peroxide on the ulcer, and surrounding this, an ichthyol paste, the leg being encased in an elastic stocking. They have obtained excellent results.

DUHRING'S DISEASE BEGINNING WITH BUCCAL LESIONS. J. NICOLAS, F. LEBEUF and P. MICHEL, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**: 26 (Jan.) 1930.

In this case, lesions of the mouth preceded the cutaneous manifestations by fifteen days. The whole buccal mucosa, as well as that of the larynx, presented vesicles and shallow ulcers following their rupture.

PERSISTENT, SUPPURATIVE ACRODERMATITIS (HALLOPEAU). REPORT OF A GENERALIZED CASE. J. NICOLAS, G. MASSIA and R. FROMENT, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**:30 (Jan.) 1930.

Generalized cases of this disease are among the extreme rarities, and an analysis of the previously reported cases leaves some doubt as to their identity.

The present case, however, is unquestionable. It was of eight years' duration, observed almost since its debut by the reporters. The early lesions on the toes and fingers were typical; then the disease spread to the forearms, legs and thighs, forming large plaques spreading centrifugally with borders formed by the characteristic flat pustule. Dystrophy of the fingers and toes occurred.

Treatment was completely ineffectual. Biopsy revealed, as a striking feature, marked plasma-cell infiltration. True suppuration was not present. The authors reject the hypotheses that the disease is a form of Duhring's disease, of staphylococcus origin, or a trophoneurosis. The etiology is absolutely unknown.

DIFFUSE CEREBRAL SYPHILIS PRODUCING JACKSONIAN CRISES AS A UNIQUE MANIFESTATION. L. BÉRIEL and J. ROUSSET, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**:60 (Jan.) 1930.

The patient presented typical jacksonian epilepsy. A syphilitic infection acquired twelve years previously seems not to have been treated. The epileptic seizures

were confined to the right side of the face. Amelioration was obtained from antisyphilitic medication, but eventually the patient died of the disease, despite a decompression operation.

Autopsy showed in the left frontal lobe an atrophic area resulting from an old cortical degeneration.

THREE CASES OF CUTANEOUS ERUPTIONS DUE TO INSULIN. A. CADE, J. GATÉ and P. BARRAL, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**: 67 (Jan.) 1930.

Eruptions from insulin have been previously reported. They belong to the toxic erythema group. The authors report three new cases; two urticarial, one morbilliform. Whether these eruptions are allergic (from protein constituents in (insulin) or due to insulin itself is undecided.

THE HISTOLOGY OF TATTOO MARKS. J. LACASSAGNE and J. ROUSSET, Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **37**:172 (Feb.) 1930.

The authors did the tattooing themselves, using india ink, and examined specimens removed after forty-eight hours and each week thereafter.

The epidermis was normal. The early specimens showed pigment granules in the papillary body and diffusely in the middle cutis. There was no inflammation. Later biopsies showed disappearance of foreign pigment in the upper derma with a moderate cellular infiltration.

Old tattoo marks showed a pronounced foreign body reaction. Finally, the authors examined tissue from an area in which the tattoo marks had been removed by silver tannate (Variot's method). They found an insignificant amount of pigment and fibrosis without inflammatory infiltration.

POSITIVE INTRADERMIC REACTIONS TO A YEAST PREPARATION IN TWO PATIENTS WITH INTERTRIGO, FROM WHICH YEASTS WERE RECOVERED. P. RAVAUT and LONGHIN, Bull. Soc. franç. de dermat. et syph. **37**:221 (Feb.) 1930.

Both patients showed positive cutaneous reactions to tests with a yeast preparation (levurine). One gave a positive complement-fixation reaction to the yeast recovered from his lesions. One patient showed a disseminated eruption of the type pityriasiform parakeratosis. The authors indicate that the latter was the consequence of allergy (levuride), as they have published observations of similar cases with proof of specific reactions.

IMPETIGO AND PSORIASIS. L. PÉRIN and C. VRETTAKIS, Bull. Soc. franç. de dermat. et syph. **37**:226 (Feb.) 1930.

The patient, aged 2½ years, had impetigo, and about two and one-half months later psoriasis developed, which seemed to be precipitated by an injection of diphtheria anatoxin. Cultures of the psoriatic scales showed staphylococcus and streptococcus. Intradermal reactions to these organisms were positive. No doubt the terrain plays an important rôle in psoriasis, but in the present case, the chain of events appeared more as a series of fortuitous circumstances.

INFECTIOUS LICHENIFICATION. MILIAN and O. KIAMIL, Bull. Soc. franç. de dermat. et syph. **37**:254 (Feb.) 1930.

The authors reported the case of a patient with a retro-auricular, lichenified plaque and a similar patch on the right arm. No mycelia were found, but cultures showed staphylococcus and streptococcus. The lesions, which had been present for two years, responded promptly to dilute tincture of iodine. Milian stated that he has demonstrated that Brocq's neurodermatitis is often nothing but the lichenification of a patch due to fungi or streptococcus, and this is particularly true of nuchal patches.

YEAST (TORULA) DERMATITIS. FERNET and BIDAULT, Bull. Soc. franç. de dermat. et syph. **37**:271 (Feb.) 1930.

The authors reported the case of a patient who showed well defined, polycylic lesions on the forearms. They were markedly exudative and pruritic. Torula was isolated from the patches. There was a positive intradermic reaction to a yeast preparation (levurine), but no serum agglutination of the organism.

FUNGISTATIC PROPERTIES OF COLON BACILLI ISOLATED FROM THE SKIN ON CULTURES OF TRICHOPHYTON INTERDIGITALE (PRIESTLEY). BIDAULT, Bull. Soc. franç. de dermat. et syph. **37**:276 (Feb.) 1930.

Bidault seeded tubes of carrot and Sabouraud's mediums with scales from a case of epidermophytosis. There first developed a variety of colon bacilli, later Priestley's *T. interdigitale*. The growth of the latter was definitely inhibited by that of the former (similar to the action of *Bacillus subtilis* on the same fungus [Weidman and Chambers]). Further investigations of the author showed that the fungistatic power of the colon bacillus was definite, and due to some substance excreted by it, and not to a change in the mediums as a result of its growth.

LEUKOCYTE REACTION IN SYPHILIS: CONJUGAL AND HEREDITARY SYPHILIS. REPORT II. J. GOUIN, A. BIENVENUE, P. DAOULAS and M. PERÈS, Bull. Soc. franç. de dermat. et syph. **37**:278 (Feb.) 1930.

The authors present further observations of this diagnostic method, which is an outcome of their experiences with sympathetic irradiation (see *Ann. de dermat. et syph.*, February, 1930, for their formal report). Investigation of the reaction in the foregoing types of syphilis led to the conclusion that the leukocyte reaction showed itself superior to the Wassermann test. In these conditions, when the diagnosis of conjugal or congenital syphilis is clinically or serologically impossible, the leukocyte reaction should be done.

TUBERCLES ON THE UPPER INCISORS AND CANINES: THEIR RELATION TO CONGENITAL SYPHILIS. HISSARD, Bull. Soc. franç. de dermat. et syph. **37**:285 (Feb.) 1930.

The author describes an anomalous tubercle on the posterior surfaces of the upper premolars and incisors which his clinical observations led him to believe are syphilitic stigmas. They seem to be rare. He has seen them in three certain cases and in one doubtful case of congenital syphilis. During a three years' search, he did not see them in any other condition.

A CASE OF BUCCAL LICHEN PLANUS CURED BY ROENTGEN THERAPY. L. HUET, Bull. Soc. franç. de dermat. et syph. **37**:292 (Feb.) 1930.

The patient had an extensive involvement of the buccal mucosa. He was intolerant to arsenic. After four filtered roentgen treatments to the cervicodorsal region, the buccal lesions disappeared.

DEFECTS OF THE BACTERIOLOGIC DIAGNOSIS OF CHANCROIDS. GOUGEROUT, JOYEUX, BURNIER and P. BLUM, Bull. Soc. franç. de dermat. et syph. **37**:350 (March) 1930.

The authors state that the general impression that a bacteriologic diagnosis of chancroid is facile and constant is erroneous. As a matter of fact, all the criteria of diagnosis, even auto-inoculation, may be absent, and yet that diagnosis should not be dismissed if the clinical features indicate it. Under these circumstances, the method of confrontation should be utilized, if possible, and the laboratory examinations repeated.

RECURRENT ERYTHEMA MULTIFORME BULLOSUM CURED BY AUTOHEMOTHERAPY. L. HUFNAGEL, Bull. Soc. franç. de dermat. et syph. **37**:358 (March) 1930.

In this case, there had been severe attacks each spring and fall for ten years. The patient had received ten injections of his own blood seven years previously, and since then there had been no outbreak.

KERATODERMA BLENNORRHAGICUM IN A GIRL FIVE YEARS OLD. LOUSTE and LÉVY-FRANKEL, Bull. Soc. franç. de dermat. et syph. **37**:362 (March) 1930.

As far as the authors are aware, this is the youngest patient with gonorrheal keratoderma whose case has been reported. The lesions, which were widely disseminated, had the typical rupioid aspect. The child had gonorrheal vulvitis.

IMPETIGO AND PSORIASIS: CURE OF THE PSORIASIS BY MIXED STREPTOCOCCUS-STAPHYLOCOCCUS VACCINE. L. PÉRIN and C. VRETTAKIS, Bull. Soc. franç. de dermat. et syph. **37**:375 (March) 1930.

In this case, psoriasis had followed impetigo. Culture of the psoriatic scales showed the presence of streptococcus with a few staphylococcus. Intradermic tests for allergy to these organs were positive. Treatment with autogenous vaccine led to rapid disappearance of the psoriasis. While admitting that deductions from an isolated case may be of doubtful value, the authors believe that in this instance the psoriasis was of infectious origin. Psoriasis is probably a cutaneous reaction precipitated by multiple causes.

CONGENITAL SYPHILIS AND THE WASSERMANN REACTION. L. QUEYRAT, Bull. Soc. franç. de dermat. et syph. **37**:378 (March) 1930.

Queyrat calls attention to the frequent Wassermann negativity in infants with occult congenital syphilis. The medical profession as a whole needs instruction on this point, as many physicians do not know that in infantile congenital syphilis the Wassermann test is frequently negative. Parents, who get most of their medical information from their family physician, are likely to be deluded into a false security by the Wassermann report. A case in point was detailed.

A CASE OF GENERALIZED LYMPHOCYTOMA. LOUSTE, CAILLAU and BOUDIN, Bull. Soc. franç. de dermat. et syph. **37**:382 (March) 1930.

The authors report a case with all the features of Hodgkin's disease which histologic examination revealed to be lymphocytoma.

INTENSE SYSTEMIC REACTION PRODUCED BY AN INTRAVENOUS INJECTION OF A YEAST PREPARATION IN A PATIENT WITH A PERSISTENT INTERTRIGO AND A MARKED CUTANEOUS REACTION TO THE PREPARATION. P. RAVAUT and D. HESSE, Bull. Soc. franç. de dermat. et syph. **37**:385 (March) 1930.

Having previously used a yeast preparation (levurine) intravenously for therapeutic purposes without incident, the authors proceeded in the same way in the present case. The injection produced a severe but transient shock. This reaction evidently occurs only in persons sensitive to the yeast preparation. It is another biologic proof of the pathogenicity of yeasts.

THE DISAPPEARANCE OF GRANULOMA ANNULARE AFTER PARTIAL ELECTROCOAGULATION (AUTODERMOTHERAPY). P. RAVAUT and H. VELTI, Bull. Soc. franç. de dermat. et syph. **37**:387 (March) 1930.

The patient had several lesions. Following an earlier successful experience in the disease, the authors coagulated several points of one lesion. All efflorescences disappeared.

MICHAEL, Houston, Texas.

Society Transactions

CHICAGO DERMATOLOGICAL SOCIETY

Regular Monthly Meeting, Jan. 15, 1930

HARRY R. FOERSTER, M.D., *President, in the Chair*

LICHEN PLANUS LINEARIS. Presented by DR. O. S. ORMSBY.

A woman, aged 35, presented a disorder of five weeks' duration. The lesions extended in a band from the mid-dorsal line to the dorsum of the left hand on the thumb side. In some portions of the band there were three distinct lines and in others two. The distribution was that of a lichenoid nevus unius lateralis.

The patient was shown to emphasize the similarity of distribution in the two disorders. The lesions were the usual flat-topped papules, and were accompanied by itching and burning sensations.

A CASE FOR DIAGNOSIS (NEVOXANTHOMA ENDOTHELIOMA ?). Presented by DR. F. E. SENEAR.

A boy, aged 5½ years, showed a number of lesions on the trunk and extremities. The first of these appeared on the thigh when he was 3 years of age, and since that time new lesions had appeared at irregular intervals.

The lesions began as small, round, reddish papules of rather translucent appearance, increasing in size slowly, the largest one being about 1.5 cm. in diameter.

The older lesions assumed a distinctly yellowish color, some having a smooth surface, while others had a slightly verrucous character.

DISCUSSION

DR. O. S. ORMSBY: I think that a positive diagnosis can be made only by a microscopic study. I never have seen a pedunculated xanthoma, but this case will probably prove to be such.

DR. H. E. MICHELSON: I would consider fibroxanthoma, but I believe that a section is necessary for final diagnosis.

DR. E. A. OLIVER: I saw the patient with Dr. Senear at our office, and think that it is one of the most interesting cases I have seen in a long time.

DR. C. W. FINNERUD: Within the last two years at the dispensary I have seen a couple of children with lesions more or less of this sort. In one case there was a single lesion and in the other multiple lesions. The histologic sections were similar to some of juvenile xanthoma produced at the Riehl Clinic in Vienna. One of the interesting things about this disorder is the fact that besides the usual xanthoma cells and fatty infiltration extending up to the epidermis there are peculiar giant cells interspersed throughout the section. As I understand it, on the presence of these more or less characteristic giant cells the diagnosis can be made.

DR. F. E. SENEAR: I was struck with the possibility of xanthoma, and on investigation I found an article by McDonald published in the *British Journal of Ophthalmology* in 1912 on "nevoxantho-endothelioma." He recorded seven or eight cases of this sort. In some the condition appeared at birth, and in some at 7 or 8 years. The clinical appearance in this case corresponds closely to that in his cases. Wise also reported two cases of nevoxantho-endothelioma. We had no biopsy until yesterday. I would not make a diagnosis of nevoxantho-endothelioma, but I think that this should be considered because of the resemblance to xanthoma and the inability to fit the condition into that group.

GRANULOMA ANNULARE. Presented by DR. E. A. OLIVER.

A boy, aged 4, presented a lesion of about one and one-half years' duration. It began on the occipital portion of the scalp. On presentation there were numerous lesions on the occipital portion of the scalp and in the left eyebrow. There were several groups on the left hand, one on the thumb, one on the third finger, one on the knuckle of the third finger and on the second finger of the right hand, one on the extensor aspect of the right forearm and one on the dorsum of the right foot. All the lesions consisted of several pearl-colored nodules, the size of a pinhead and larger, situated deeply in the skin and arranged in an arciform manner. The lesions on the scalp were larger. No subjective sensations were present and the child's health was good.

DISCUSSION

DR. J. H. MITCHELL: I agree with the diagnosis and think that the case is interesting, as this is the third one with lesions of the foot in children to be demonstrated in the meetings this year.

DR. E. A. OLIVER: I presented this patient because of the large number of lesions and because of the involvement of the scalp. I recently read an article by Little in which he expressed the belief that granuloma annulare of the scalp was not common. A biopsy will be made of the lesions on the scalp. This is the first time that I have seen it in that location.

DR. H. E. MICHELSON: May I suggest that Dr. Oliver perform a tuberculin test? The Jadassohn Clinic looks on granuloma annulare as a tuberculid, I believe.

ACTINOMYCOSIS. Presented by DR. C. W. FINNERUD.

A housewife, aged 30, was first seen at the Cook County Hospital Skin Clinic two days before presentation because of an eruption of the left side of the neck in front, of about seven weeks' duration. This area became tender and swollen the morning after an unsuccessful attempt had been made to extract a lower left wisdom tooth. Shortly after this procedure, an abscess formed in the vicinity of the tooth and broke; soon another similar one formed. The area of involvement on the neck had become progressively larger and harder, with more discharging nodules and tenderness.

Inspection showed a palm-sized, markedly indurated area on the neck, containing half a dozen or more round and oval, almond-sized, bluish to reddish nodules, some of them soft and fluctuating. "Sulphur granules" were demonstrated grossly in the pus from one of the lesions and the ray fungus was demonstrated in fresh preparations.

DISCUSSION

DR. C. W. FINNERUD: Of ten or more cases of actinomycosis this is the first one that I have seen in a female.

DR. H. E. MICHELSON: What will the therapy be? In our series of cases of actinomycosis the prognosis has been very bad.

DR. C. W. FINNERUD: With the exception of one case, we have had success in keeping the patient pretty well saturated with iodides combined with neoarsphenamine given intravenously. Locally we use white precipitate, with rather large doses of well filtered roentgen rays. I shall be glad to hear any further suggestions as to treatment.

DYSCHROMIA. Presented by DR. O. S. ORMSBY.

A man, aged 41, presented discolored areas on the forehead, neck and extremities of seven weeks' duration. In his work he came in contact with two powders, one containing 80 per cent nickel and 20 per cent iron, and a second containing in addition to the nickel and iron, sodium silicate, chromic acid and talc. He had

been doing the present sort of work for two years, and he stated that workers in this department often were transferred on account of pimples developing on the extremities and irritation of the mucous membrane of the nose and throat. He said he had previously had the pimply condition on the arms and legs.

The present eruption began on the forehead, later developing on the side of the neck and the flexor surfaces of the forearms and legs, and presented the same appearance when first noted as at the time of presentation.

There was a patch of bluish-brown discoloration on the left temple, 4 by 9 cm., in which the lines of the skin were exaggerated, but there was no palpable thickening. The center was evenly and deeply pigmented, while the margins presented a mottled appearance. A similar but smaller patch was present on the right temple. Several similar oval or rounded patches were present on the sides of the neck immediately below the rami of the jaws. Small, pigmented lesions were seen on the forearms and legs. These appeared to be remains of a preceding inflammatory lesion. In addition there were several small lichenoid patches on the flexor surfaces of the wrists. There was no history of inflammation and none was present. The blood pressure was 145 systolic and 95 diastolic. Some itching was present on the extremities.

DISCUSSION

DR. S. W. BECKER: I have no diagnosis to offer, but the patient's hair has the peculiar brownish tint that is seen in patients with Addison's disease. The pigmentation is of the slate-gray type, which places most of it in the dermis. There is a little of the metallic hue seen in argyria.

DR. H. J. PARKHURST: It occurred to me that Riehl's melanosis should be considered.

DR. E. A. OLIVER: I have had two cases from the Western Electric Company that were similar to this one. The last one I showed at our annual meeting about five years ago, and at that time Dr. Otto Foerster suggested the diagnosis of Riehl's melanosis. The distribution was a little different from that in this case and the pigment was not as deeply situated.

DR. O. S. ORMSBY: I think that the opinion is divided; some believe the disorder is of internal origin and some think it has a local cause. The patient is convinced that the pigmentation was induced by contact with materials used in his work. We will try to make a microscopic study and report later.

A CASE FOR DIAGNOSIS (PYODERMA?). Presented by DR. F. E. SENEAR and DR. M. S. WIEN.

E. S., a girl, aged 8, was presented about two years ago when she was a patient of Dr. Oliver's at the Children's Memorial Hospital. She was first seen by us in February, 1929, when she had an eruption on the legs and arms of four years' duration. The eruption appeared subsequent to the application of a cast to the right leg and thigh that was worn for seven months. After the removal of the cast extensive ulceration of the right leg was noticed, and soon afterward similar ulceration appeared on the right side of the chest, right arm and left knee. The lesions persisted without change for three years. In February, 1929, there was marked, extensive superficial ulceration of a diffuse and discrete type with coalescent plaques to form figured lesions on the involved areas, with the greatest involvement of the right leg. A thin purulent discharge was present and impetiginous vesicles were noted at the margins of the patches.

The patient was not seen again until Jan. 14, 1930. During the interval she had received quartz light irradiation in exposures of one hour, generally daily, for ten months and petrolatum dressings. The condition of the child both generally and locally was considerably improved. A small ulcer was still present at the right elbow, but there was marked involution of the ulceration of the right leg with residual ulceration of the right calf and the anterior surface of the right leg,

and a healing patch over the left knee. The ulcers were clean and seemed to be granulating well.

DISCUSSION

DR. J. H. MITCHELL: This case is rather interesting in view of the one that I demonstrated several years ago of pyogenic ulcer on the left forearm of a boy. At the meeting at the Mayo Clinic recently I had an opportunity to see a group of these cases, which resembled my case closely. In this case there is an absence of the undermined margin. In the case that I studied there was an area about 1 cm. of undermining at the margin and it progressed in that way. The copious pus was full of phagocytic hemolytic streptococci.

DR. E. A. OLIVER: I presented this same case about three years ago as one of tuberculosis of the skin. At that time Dr. Ormsby said that he had seen the patient here with an entirely different type of tuberculosis. I think that the lesions were on the face at that time. She was treated at the Children's Memorial Hospital for some time, without benefit.

DR. H. E. MICHELSON: I have been much interested in this group of chronic pyodermas. In the main we have tried to classify them under two general headings: the vegetating type and the ulcerating type. Our cultures have shown staphylococci. In the main the cases seem to stay true to type.

DR. O. S. ORMSBY: This child was seen by us in 1926, with an eruption on the face that was classed as tuberculid. The Pirquet test was negative and the condition was altogether different at that time. We have seen several of these superficial serpiginous ulcerating lesions that probably belong to this group. In one of those cases a bacteriologist isolated a yeast organism from the cutaneous lesions and from the feces. In two cases, as in some others that have been recorded, there was severe anemia resulting from colitis with hemorrhage. Whether that had anything to do with lowering the immunity to micro-organisms I do not know, but it was on account of the colitis that we were looking for amebas and found yeasts. On looking back over this group it seems likely that they were of streptococcic origin.

Dr. F. E. SENEAR: I was struck by the partial resemblance to the case that Dr. Mitchell showed before this society previously and also to those seen at the Mayo Clinic at the October meeting. It is interesting that when Dr. Mitchell's patient and this patient were shown the first time the discussion ran to tuberculosis and syphilis, and now with further acquaintance with the cases it is easy to accept them as pyoderma.

DR. H. R. FOERSTER: I am in accord with Dr. Michelson's analysis and classification of these cases.

DR. M. S. WIEN: The roentgenographic examination of the chest and an injection of iodized poppy seed oil 40 per cent showed nothing of interest.

DERMATITIS MEDICAMENTOSA (QUININE). Presented by DR. M. S. FINK (by invitation).

A man gave a history of intermittent attacks of acute dermatitis of the face over a period of three or four years. When first seen, on Dec. 25, 1929, he presented an intense, acute eruption on the face, forehead, eyelids and neck, with considerable swelling and edema. The lower border of the eruption on the neck was sharply limited to the collar line.

He stated that he was sensitive to quinine internally, having had a generalized scarlatiniform eruption four years previously following the ingestion of quinine for a cold. A skin test applied to the left arm resulted in a distinct dermatitis in eighteen hours. It was shown that the eruption had developed as the result of contact with a towel which was shared with an associate who used large quantities of quinine hair tonic daily.

When the patient was presented, the face and neck had almost entirely cleared and the left arm showed the remnants of the eruption which resulted from the injection of an alcoholic solution of quinine sulphate.

DISCUSSION

DR. O. S. ORMSBY: We had a patient who developed a severe scarlatiniform eruption following the administration of quinine, in the dosage of 2 grains (0.13 Gm.). This patient knew that he was sensitive to quinine. Some time later, quinine hair lotion was applied to the scalp by a barber. Although this was immediately washed off, the patient developed another typical quinine eruption. His sensitization to quinine was evidently highly developed.

DR. J. H. MITCHELL: On three different occasions, resorcinol in a lotion applied to my scalp has caused a generalized eruption.

DR. F. E. SENEAR: With Dr. Pusey I saw a patient several years ago who is of interest in this connection. He came to us shortly after being discharged from the contagious ward, where he had been taken because of scarlet fever. Just as he was to be discharged he developed a cold; he took some quinine, and an eruption developed. He was kept in for three or four weeks to recover from a supposed recurrence of scarlet fever. He then developed another cold and took more quinine; the third attack developed, and he came to us. He had had a similar attack in France during the war, following the use of a hair tonic.

A CASE FOR DIAGNOSIS (LUPUS VULGARIS?). Presented by DR. F. E. SENEAR and DR. M. S. WIEN.

F. K., a man, aged 40, presented himself at the skin clinic on Jan. 14, 1930, with a cutaneous eruption of three weeks' duration. He stated that he had always had pimples on his chest and back. He had suffered with abdominal distress for two years and he consulted a physician who gave him a salve to rub on his chest. The eruption appeared three days after he applied this ointment. Itching was severe when it first appeared. Blisters and white "pimples" containing a milky fluid were present at the onset. Some of these lesions ruptured spontaneously and others were ruptured on scratching, leaving red spots which still remained.

The patient presented a generalized, symmetrical eruption on the trunk, with the greatest intensity on the thorax; this consisted of erythematous papules and superficial nodules, from the size of a pinhead to that of a pea, some of which had a glazed shiny surface, indicating atrophy. The lesions were firm on palpation and some exhibited brownish discoloration on diascopic pressure.

The blood count showed: hemoglobin, 90 per cent; red cells, 5,040,000, and white cells, 10,150. The differential count showed: polymorphonuclears, 60 per cent; large mononuclears, 2 per cent; lymphocytes, 35 per cent, and eosinophils, 2 per cent.

DISCUSSION

DR. H. E. MICHELSON: I think that this is some type of tuberculosis, but I cannot exactly classify it. It is probably a disseminated lupus vulgaris, but not the type that occurs in children following an acute exanthem. Neither do I believe that it is a papulonecrotic tuberculid.

DR. E. P. ZEISLER: I should not think a disseminated lupus would heal as rapidly as this condition is healing.

DR. L. M. WIEDER: I think that the condition is tuberculous. The man was considerably undernourished and in poor health. He has a seborrheic type of skin. I think that he should be investigated for pulmonary involvement.

DR. C. W. FINNERUD: I would suggest that in generalized cases, particularly in those which come on after exanthematous fevers in children, a placebo be used, in that lesions of this type, although clinically they may be tuberculous, are known frequently to clear up spontaneously within a few weeks.

DR. F. E. SENEAR: This patient has had some abdominal complaints for some time. Examination of the chest gave negative results. The pustular lesions on the face we attribute to acne. Dr. Michelson expressed our opinion of the case. With regard to the rapid absorption, I think some cases have been presented here in which there has been some discussion as to whether they were acnitis or disseminated lupus. It is my experience that we have difficulty in distinguishing between that and lupus of the miliary type. I think that a high degree of allergy in the borderline cases may account for the rapid disappearance of the lesions.

PSEUDOLEUKEMIA CUTIS. Presented by DR. S. W. BECKER (by invitation).

A man, aged 43, noted lesions on his scalp three months before presentation. Coincidentally he suffered from nausea, malaise and dryness of the mouth with dysphagia. He had had difficulty in sleeping for two months. Lesions had been present on the upper part of the thorax for six weeks. A complete blood count, Wassermann and Kahn reactions of the blood and urinalysis revealed no abnormality. A roentgenogram of the chest revealed no enlarged glands, but the right dome of the diaphragm was markedly elevated. A complete gastro-intestinal examination revealed no reason for this.

Scattered over the scalp and the upper part of the thorax were superficial, moderately elevated tumors, up to 1.5 cm. in diameter. The skin over them was normal. The color varied from bluish red to brownish red, and the borders of some of them were telangiectatic.

Histologic section showed an infiltration of lymphocyte-like cells throughout the superficial dermis and extending down along the appendages, even between the subdermal fat cells. The nuclei were flattened between the collagen bundles, and the cells were gathered into masses only about the appendages.

DISCUSSION

DR. O. S. ORMSBY: The lesions in the scalp were plaques and nodules, and the plaques were made up of fused nodules. Those on the trunk were nodules. The patient had some constitutional trouble, so from the clinical standpoint the leukemic group is suggested. A case almost identical with this was reported by Howard Fox about six years ago, which he demonstrated to be true Hodgkin's disease. Lymphogranulomatosis, meaning a disorder in which there is a typical classic histologic picture showing the Dorothy Reed cells, has not been demonstrated here; nevertheless, the diagnosis of pseudoleukemia is most likely. Leukemia and sarcoma should also be considered. I think that syphilis can be ruled out without difficulty. Sarcoid and all forms of tuberculosis can be ruled out. From the clinical standpoint, therefore, I would regard it as lymphogranulomatosis, with the lesions in the scalp as specific lesions of that disorder. If this proves to be correct, Dorothy Reed cells should be found.

DR. S. W. BECKER: We felt as Dr. Ormsby does, that the case belongs in the group of white blood cell dyscrasias. The section was seen by Dr. Wells, and he made a diagnosis of pseudoleukemia, not meaning Hodgkin's disease but a certain type of lymphocytic neoplastic disorder.

DR. H. E. MICHELSON: This is such a complicated cutaneous picture that it is difficult to discuss. I agree that there are two types of lesions: one urticarial and the other infiltrated. In spite of the fact that the observations on the blood are negative for leukemia the section of the skin suggests a leukemic infiltrate. The patient stated that the lesions come and go, but that is entirely consistent with leukemic nodules. If the blood becomes leukemic the nodules may even then come and go, but the blood picture usually remains constant.

URTICARIA PIGMENTOSA. Presented by DR. A. W. STILLIANS.

A Jewish schoolgirl, aged 14, was said to have had brown spots on her skin since infancy. On the neck were about a half dozen elliptical, brown macules, with

the long axes in the line of wrinkling. Some of them showed wrinkling resembling atrophy. A very few such macules were seen on the trunk and limbs. On pinching these lesions a prompt reaction with wheal formation took place.

LUPUS VULGARIS DISSEMINATUS (SUCCESSFULLY TREATED WITH GOLD SODIUM THIOSULPHATE). Presented by DR. F. E. SENEAR and DR. M. S. WIEN.

A. T., a negress, aged 33, had a cutaneous eruption of thirteen years' duration, involving the face and extremities with associated chronic swelling of the bulbous portion of the nose, upper lip, hands and legs. Changes in the bones were also seen on roentgen examination of the hands and feet.

The eruption consisted of an aggregation of reddish-brown miliary nodules that presented an apple jelly appearance on diascopic pressure, when first seen. She had been under observation in Chicago at the various clinics since 1920, and was presented to this society about three years ago. She was first seen by Dr. Senear in April, 1929, and gold sodium thiosulphate therapy was begun at that time. Up to Jan. 2, 1930, she received a total of twenty-six injections at intervals of one week or longer, starting with 15 mg. and gradually increasing to a maximum dose of 100 mg. She had received a total of 1.43 Gm. of the gold. Improvement was noticed after the tenth injection, when a total of 0.4 Gm. of the drug had been given, and had been progressive since. There had been a marked clearing of all the nodular lesions and a diminution of the swelling of the nose, lips and extremities. A slight residual pigmentation remained on the face. The general health of the patient had improved considerably and she had gained in weight.

DISCUSSION

DR. E. P. ZEISLER: This patient was on our service many years ago at the Cook County Hospital. She has made wonderful improvement.

DR. L. M. WIEDER: We have given forty-eight injections in one case of lupus only, with practically no improvement in the condition.

DR. C. J. WHITE: Recently we have had some stubborn cases and as a last resort have given gold sodium thiosulphate with marked benefit in some.

DR. O. S. ORMSBY: At one of our recent meetings I reported several tuberculous conditions that had been benefited by gold sodium thiosulphate, and today I wish to mention one more. This patient was shown when Professor Jadassohn was here, as having lupus miliaris disseminatus fasciae or acnitis. Professor Jadassohn felt that there were cases that went from one condition into the other. An interesting feature in this case is that from June 1 to August 16, injections of gold sodium thiosulphate resulted in complete recovery. Weekly injections of 50 mg. were employed. In lupus vulgaris we have had no success with this drug.

A CASE FOR DIAGNOSIS (LEPRA? SYPHILIS? TUBERCULOSIS?). Presented by DR. C. W. FINNERUD.

A Filipino, single, aged 18, reported at the Skin Clinic of the Cook County Hospital because of a generalized eruption of four and one-half months' duration. He also had a large patch of involvement of what he thought to be of different nature in the vicinity of the right eye and the left buttock, of between six and seven months' duration. He stated that when he entered this country from the Philippines a little over seven months before, his skin was clear. There was no history of a primary lesion, and he had had no previous skin disease. He stated that the lesions of the hip and eye both began as firm, red lumps, the size of a coin, which became larger rather rapidly but which did not break down; the skin in these areas remained red, thick, rough and dry. About a month or more after the appearance of the patches on the buttock and near the eye, the general eruption appeared. From the beginning, the generalized lesions had been most marked on the extremities, a few new, hard, brownish-red nodules having been noticed every day or so until recently when the disorder came to a standstill.

There had been no constitutional symptoms with the present disorder, and no past serious adult illnesses. A cousin whom he had never seen was said to have died of leprosy. There was no other noteworthy family history. He firmly maintained that he had never been exposed to venereal disease.

Examination showed essentially a generalized discrete papular and nodular eruption, the lesions round and oval, soft and firm, bluish to brownish red, some scaling and some smooth, and averaging the diameter of a split pea, though varying from that of a match to that of a dime. There were no lesions in the mouth; there were a few papules on the palms. This eruption was least marked on the thorax. There was an infiltrated, reddish, scaling plaque involving the major portion of the left buttock, part of its center less infiltrated and possibly clearing, and similar involvement of the right eye and vicinity, extending to involve the right temple and ear. There was an indurated nodule of the left side of the prepuce and an enlarged left inguinal gland. The right inguinal glands were palpable but barely enlarged, and there was little or no cervical or axillary adenopathy.

Repeated Wassermann tests of the blood were negative; repeated nasal smears revealed no lepra bacilli. The blood counts, including a differential leukocyte count, yielded no noteworthy observations. There was a questionable eruption from three injections of neoarsphenamine. A dark-field examination of the penile lesion had not been made because of unavoidable circumstances.

Histologic sections from the margin of the large plaque of the left buttock showed, chiefly, large and small nests of epithelioid cells, throughout the corium. There was some lymphocytic infiltration about these nests but there were practically no plasma cells. There were no true giant cells, but at the center of some of the nests there seemed to be an attempt at giant cell formation.

A Case for Diagnosis (Lupus Vulgaris? Lepra?). Presented by Dr. S. W. Becker.

A Filipino, aged 30, had an eruption which started on the left cheek six months before presentation, and spread gradually to include both cheeks, the upper lip and the forehead. A physical examination gave negative results with the exception of the skin and an anal fissure.

On the face, involving the median portion of both cheeks, the upper lip and the eyelids, and coming to a point near the center of the upper part of the forehead, was a mildly inflammatory, reddish plaque. It was slightly elevated, with an irregular border. Glass pressure revealed apple jelly nodules. Intranasal examination showed extension of the process into the nose about three fourths of an inch (1.9 cm.), but no ulceration. The Wassermann and Kahn reactions of the blood were negative, and the urine was normal.

Microscopic section revealed many discrete and confluent tubercles, mostly of the epithelioid and lymphocytic type, with very few giant cells, located in the superficial dermis. No caseation was seen, and no acid-fast bacilli were found in sections.

DISCUSSION

Dr. E. P. Zeisler: I called attention to the fact that the patient shown by Dr. Finnerud had a bubo in the groin and an indurated lesion of the glans penis, because I think that this might have been the point of entry of the infection. There are many interesting points about this case: some features that resemble tuberculosis and others suggesting leprosy, sarcoid and syphilis. I think that the negative Wassermann reaction should be checked, and that a therapeutic test should be made. The histologic observations show more than sarcoid. Leprosy should also be ruled out.

Dr. H. J. Parkhurst: I think that Dr. Finnerud's patient may have two conditions. On the penis is a sore, with inguinal adenopathy, and there is a nodular eruption. The left ulnar nerve was definitely palpable. The nodules vary in size, but some of them have a glazed brownish appearance that I cannot reconcile with secondary syphilis.

DR. H. E. MICHELSON: I think that Dr. Finnerud's case clinically is leprosy. It seems to be too widely distributed to be a sarcoid of Boeck. Since the bacillary observations are negative, I think that something ought to be done to produce a shock and see if that will not free the bacilli.

DR. M. H. EBERT: I think that the reactions indicate a high type of sensitivity in the skin, and I believe that there is a tendency in those cases to destroy the bacilli rapidly. At the dispensary there was a case of leprosy in which it was impossible to find the bacilli in the specimens, but they were demonstrated in the nasal smear and had the typical sarcoid structure. Another interesting thing, I think, is the anesthesia in a patch over the buttock. That area seems to be relatively insensitive, and I think that this should be thoroughly investigated.

DR. E. A. OLIVER: Our experience with nodular leprosy at the Cook County Hospital is that in the examination of sections the bacilli were found easily. The attempts that Dr. Finnerud has made to isolate the organism without success make me doubtful of the diagnosis of leprosy.

DR. S. W. BECKER: I think that all we can say about these cases is that they show epithelioid structures both clinically and histologically. I agree with Dr. Oliver that although it is difficult to find the bacilli in the sarcoid structure, the fact that they are not found makes one lean toward tuberculosis. We made careful investigation of the nasal mucosa of our patient and found no sign of ulceration. I understand that nasal smears are positive only when the lesions are ulcerated.

DR. O. S. ORMSBY: My experience with leprosy is that it is very easy to find lepra bacilli, while there is great difficulty in finding tubercle bacilli in tuberculous lesions. Dr. Finnerud's patient, in my opinion, has sarcoid. Occasionally a sarcoid structure is found histologically in leprosy, and it has not been demonstrated that in lepra these lesions are allergic. If that is the case we should find the bacilli without difficuly in the nodular cases.

DR. H. R. FOERSTER: I believe that both of these cases clinically resemble lepra, and I believe, as Dr. Wile does, that the failure to demonstrate Hanson's bacilli is not sufficient to exclude that disease from consideration.

DR. C. J. WHITE: I should like to know how frequently one finds generalized or localized adenitis in cases of lepra.

DR. A. W. STILLIANS: Several patients in the County Hospital had adenitis, the glands swelling with febrile exacerbations and then subsiding somewhat.

DR. C. N. DOTY: My impression of Dr. Finnerud's case was that it was lupus, and that of Dr. Becker's case was that it was leprosy.

DR. O. S. ORMSBY: I have not seen adenitis in leprosy.

DR. H. E. MICHELSON: Adenitis occurs in leprosy, as noted in Rogers' book.

DR. C. W. FINNERUD: I think that if Dr. Becker makes a section he will have no difficulty in demonstrating lepra bacilli. Concerning the patient whom I presented, the lesion on the penis appeared after the disseminated lesions on the body, according to the patient. The lesions on the extremities were present first and many of them are just as hard as the lesion on the prepuce. The inguinal glands are barely palpable on the right side, although there is an enlarged gland on the left. If this is nodular leprosy it is the first case of nodular leprosy in which we have not been able to demonstrate the organisms immediately. I could not palpate the ulnar nerve at the time when I examined it. The dark-field examination was not carried out because the apparatus was out of order. We will check the penile lesion and enlarged gland with the dark-field at the first opportunity. After studying the case intensively over a period of a week or more, I am still uncertain about the diagnosis; it may be leprosy, syphilis or tuberculosis.

DR. E. A. OLIVER: I did not think that Dr. Becker's case was leprosy. In the cases that we have seen there has been marked anesthesia in a patch that size,

but this man had anesthesia outside the border of the lesion and hyperesthesia within. I thought that it was the type of lesion that Dr. Ormsby showed at the time of the Jadassohn meeting, lupus erythematodes (Leloir).

DR. S. W. BECKER: The diagnosis in my case I think lies between lupus vulgaris and leprosy. The fact that the boy has a slight tumefaction of the upper lip, and that the lesion is inflammatory and shows tuberculoid structure I think is in favor of lupus vulgaris.

NOTE (DR. C. W. FINNERUD): No definite evidence of the presence of syphilis or leprosy was gained after two months of further study of this patient, although there was a rather pronounced improvement in all the lesions under intensive antisyphilitic therapy. Dark-field examination was negative, and lepra bacilli were not demonstrated after intensive search in daily smears and numerous later histologic sections, even after the administration of potassium iodide and smallpox vaccine. It now appears most likely to me that this is an unusual manifestation of tuberculosis, probably belonging in the sarcoid group.

A CASE FOR DIAGNOSIS (LICHEN PLANUS?). Presented by DR. F. E. SENEAR and DR. M. S. WIEN.

B. T., a housewife, aged 62, had an eruption on the thighs and wrists of six years' duration. The lesions were intensely pruritic and appeared soon after an operation for an infection of the left leg six years before presentation.

The patient had an eruption in both popliteal spaces with greater involvement on the left, extension up the thigh and associated involvement of the flexors of the wrists. The lesions were discrete, erythematous papules, the size of a pea, some having crusts and others coalescing to form lichenified patches. Some lesions were noted in lines along the sites of scratch marks.

Biopsy showed a moderate amount of hyperkeratosis and some acanthosis, with the localized epidermal defect occupied by an area of necrosis in which only a small amount of nuclear débris was visible. The blood vessels were dilated, but only a few contained blood. Collections of small round cells were noted, but no giant cells or tuberculous structures were found.

DISCUSSION

DR. L. F. WEBER: I thought that the condition was lichen planus.

DR. A. W. STILLIANS: I thought of lichen planus and also of a nodular dermatitis such as we showed some years before in an old man. We talked about prurigo nodularis and a few weeks later, on the application of sulphur ointment, the skin cleared.

DR. H. J. PARKHURST: I thought that the color of the flat, polygonal top would fit in with lichen planus of the hypertrophic type, although the histologic picture does not seem to coincide very well with that diagnosis.

DR. F. E. SENEAR: Our first thought when examining the eruption on the thighs was that it was either lichen planus of the hypertrophic type or neurodermatitis. The eruption on the wrists led rather to that diagnosis. Histologic examination showed a small plug with the epidermis over it intact, so it is not due to secondary infection from scratching. Clinically I am inclined to the diagnosis of hypertrophic lichen planus, but unless a second biopsy shows a different picture we cannot reconcile the histologic observations with that diagnosis.

LUPUS ERYTHEMATOSUS. Presented by DR. A. W. STILLIANS.

A girl, aged 12, presented an eruption which began when she was 21 months old and which had persisted on the face since that time. At times there had been involvement of the arms and hands.

She had just completed a course of twenty-nine injections of gold sodium thiosulphate, with a dosage of about 0.75 mg., with considerable improvement, the eruption having cleared entirely except on the face.

DISCUSSION

DR. O. S. ORMSBY: I think that this case is of extraordinary interest because of the age of the patient. Even at the early date when we first saw her, at 5 years, the diagnosis was made of lupus erythematosus. We saw her only during that year, before we had the modern method of treatment of that disorder, and she received the usual treatment of that time. It is rather interesting to see that the gold treatment has not eradicated the disease, though some improvement has occurred. The child is undersized. When she was 5 years of age, I thought the case was of sufficient importance to be reported before the national association where it was agreed that the disorder was lupus erythematosus.

SARCOID (BOECK TYPE). Presented by DR. H. R. FOERSTER and DR. L. M. WIEDER.

R. R., a Sicilian, cement worker, aged 45, was first seen on Dec. 11, 1929, because of a nodular condition affecting the right frontal and glabellar regions. The history revealed that the patient had been struck at this site by a piece of tile five years before, the wound being sutured and healing by first intention. In May, 1929, a nodule was noted in the scar at its upper pole, hard to the touch and painless. The nodule was excised in July but promptly recurred. On Nov. 7, 1929, it was again removed by the surgeon and a biopsy was done. Since that time the lesions had recurred, with considerable extension toward the glabella and supra-orbital ridges. At the time of the last removal some necrosis of the right supra-orbital ridge was noted. The general medical history was unimportant. The patient had lived in the United States since 1904, except for a return for one year to Sicily in 1911.

Examination revealed a noninflammatory swelling underlying and extending for about one-half inch (1.2 cm.) to each side of a linear scar parallel to, and 1 inch (2.5 cm.) to the right of the midline of the forehead, and extending downward and laterally for a short distance over the supra-orbital ridges and glabella. This mass was of the consistency of hard rubber, painless and cold. The overlying epidermis appeared normal except immediately adjacent to the scar where it had a brownish-red hue. A general physical examination gave normal results.

The Wassermann and Kahn tests were negative. The urine was normal. The blood count showed: hemoglobin, 100 per cent; red blood cells, 5,000,000, and white blood cells, 9,000. The differential count showed: polymorphonuclears, 72 per cent; basophils, 1 per cent, and lymphocytes, 27 per cent. Roentgenograms of the chest and skull revealed no abnormality.

Microscopic examination of the tissue showed numerous large, dense masses of epithelioid cells, sharply separated by heavy fibrous septums extending in all directions. Occasional giant cells were present. None of the cell masses showed central caseation, although they stained poorly in their centers. Special stains revealed no acid-fast organisms.

DISCUSSION

DR. C. W. FINNERUD: I think that this case is very interesting because of the associated probable involvement of the bone. Because of the soft character of the superficial part of the lesions and the color I expected to see the changes of sarcoid under the microscope, which it proved to show.

DR. L. M. WIEDER: A roentgenogram of the skull taken this morning showed no pathologic condition of the bone. At the time the biopsy was taken the surgeon informed us that there was some necrosis of the glabellar ridge. The section was stained for acid-fast bacilli but nothing was found. We found the case interesting because we saw the patient for some time before we had access to histologic preparations and we considered it sarcoid. We also considered Hansen's disease, syphilis and even a malignant condition.

DR. H. R. FOERSTER: Dr. Otto Foerster suggested consideration of Hansen's disease as well as tuberculosis and syphilis. We presented the patient with a diagnosis of Boeck's sarcoid but considered the clinical features unusual.

ULERYTHEMA SYCOSIFORME (LUPOID SYCOSIS). Presented by DR. C. W. FINNERUD.

A man, aged 35, had a cutaneous disorder of one and one-half years' duration which began on the upper lip and involved chiefly the major portion of the right cheek, but to some extent the upper lip and other areas of the face. He also had an inflammatory condition of the margins of the eyelids which had been present to some extent since childhood. He had had light treatments and numerous local preparations but no roentgenotherapy. He had never been free from the disorder since its onset. His general health was good and there were no noteworthy points in his past or family history.

Examination showed a red patch of dermatitis involving the major portion of the bearded region of the right cheek; its center was atrophic though red, and largely devoid of hair. The margin was more infiltrated and contained occasional inflammatory follicular papulopustules, most of which were pierced by a hair. The margins of the lids were red, infiltrated and crusted and contained only a few hairs. There were also a few patches of follicular dermatitis of the upper lip and elsewhere on the face and neck.

DISCUSSION

DR. L. F. WEBER: We treated this patient some time ago for sycosis. At that time he was given roentgenotherapy.

DR. S. W. BECKER: The patient had the blepharitis found in sycosis.

DR. C. W. FINNERUD: The patient said that he had received a few "light" treatments, but no roentgenotherapy. I thought that excessive roentgenotherapy might account for the rather marked degree of central atrophy which was present.

ARSENICAL DERMATITIS, ICHTHYOSIS AND TELANGIECTASIS. Presented by DR. O. S. ORMSBY.

The complete history and a description of this patient's lesions may be found in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, 1927, vol. 15, p. 740.

For one year after he was presented before this society three years ago, injections of sodium thiosulphate were employed, with great improvement in the skin. In the last two years the telangiectasia had increased and a new papular element had been added.

At present there was a striking resemblance of the whole picture to that seen in poikiloderma vasculare atrophicans. On the upper portion of the trunk in front were numerous small, moderately inflammatory papules, while the lower portion presented marked telangiectasia. The hyperkeratotic lesions present a few years before had disappeared. The anterior surface of the thighs was the seat of a diffuse network of telangiectasia seen in postroentgen dermatitis. The palmar and plantar keratosis was much less marked than it was three years before. The patient was now shown on account of the decided increase in telangiectasia.

DISCUSSION

DR. E. P. ZEISLER: Some of the features of this case suggest a poikiloderma-like condition and others suggest a chronic arsenic pigmentation of the face, with keratoses of the hands.

DR. H. J. PARKHURST: The appearance of the skin was suggestive of a radiodermatitis, as in dermatitis atrophicans vasculare. I agree with Dr. Zeisler that we should consider the possibility of arsenic causing the hyperkeratoses on the hands and face.

DR. C. N. DOTY: My impression was that it was an arsenical dermatitis. The hyperkeratosis of the hands made me think definitely that it was this disorder.

DR. O. S. ORMSBY: From the early history we assumed that he had parapsoriasis, which apparently had been treated with arsenic. When we demonstrated

him before the annual meeting four years ago arsenic was demonstrated in the sections shown. He had the typical pigmentation and hyperkeratoses on the abdomen similar to those in some cases that I saw in London during the arsenic epidemic. He was given sodium thiosulphate and made much improvement. Since then, notable changes have occurred including a marked increase in the telangiectasia, and it may be that the disorder will progress and be classed at a later date as poikiloderma atrophicans vasculare.

DR. C. N. DOTY: Recently I saw a patient with psoriasis who had received large amounts of arsenic in a patent medicine which was taken over a period of seven years. He had a little telangiectasis about the shoulders but not as much as was present in Dr. Ormsby's case.

LICHEN PLANUS. Presented by DR. A. W. STILLIANS.

A white man, aged 21, a druggist, complained of an itching eruption which began on the scrotum and the backs of the hands in July, 1929, and soon spread to the trunk and limbs. When first seen, in August, he had numerous bullae, some of which were hemorrhagic, on the trunk and some on the limbs, superimposed on the erythematopapular, bright red, patchy dermatitis, which showed linear arrangement in some areas. Scratch marks were plentiful. On the buccal surfaces a few fine white tracings and one small circle were observed.

On presentation the patient showed a bright red eruption on the chest and abdomen, composed of linear elevations confluent in reticular design, with a paler, less distinct eruption on the arms and legs.

DISCUSSION

DR. E. A. OLIVER: This is a case of lichen planus with bullae. I have seen just one case of bullous lichen planus, but in my opinion this is another example.

DR. O. S. ORMSBY: I thought that the bullae were interesting. I attended a meeting of the London Society in 1900 when the discussion was on bullous lesions in lichen planus. A number present at that meeting said this was impossible, and that the lesions must be extraneous, but some had seen them. Since then we have seen several cases and there is no question about vesicles and bullae occurring as a part of lichen planus.

DR. F. E. SENEAR: Several years ago I saw a patient who was acutely ill, with a temperature of 101 F., and with an extensive bullous eruption. We thought at first glance that he had pemphigus acutus, but there was a history of a considerable duration. We thought of pemphigus vulgaris, but on close examination the patient showed a few lesions that were violaceous and shiny and definitely lichenoid. Dr. Ormsby saw the patient in consultation, and said that he thought the case would fall into the lichen group. All the bullae disappeared. On the foot there was one as large as a hen's egg. As the bullae disappeared their outer limits were defined by typical lesions of annular lichen planus.

DR. H. R. FOERSTER: We have recently had under observation a similar case with vesicular lesions under each breast which developed into typical lichen planus papules. There were lesions of lichen planus on the buccal mucous membrane. Six months previously we treated this patient with radicular roentgenotherapy because of a generalized lichen planus eruption. The lesions disappeared at that time without additional medication.

DR. A. W. STILLIANS: I have seen two cases of bullous lichen planus, one with the development of bullous lesions during my treatment. This case was interesting to me because of the marked resistance to therapy.

DR. J. H. MITCHELL: I saw a patient last year who had the usual eruption which cleared up. She had a recurrence recently and had a large group of vesicopapules on the abdomen, with typical lesions elsewhere. The vesicopapules subsided, but the typical lichen planus lesions in other areas persisted.

BROMODERMA. Presented by DR. S. W. BECKER (by invitation).

A man, aged 40, had an outbreak of pustular lesions in December, 1928. The eruption disappeared in six weeks following intravenous injections twice daily. The lesions recurred in August, 1929, and had persisted. They started as pustules, which spread peripherally and healed centrally. They had been so painful and tender that he had had to have a sedative at night. He was said to have had a three plus Wassermann reaction of the blood, and had been receiving intravenous injections twice weekly.

Various methods of treatment had been used, with no effect. He stated that he had taken bromo selzer almost daily for gastric difficulty, beginning just before the eruption appeared in December, 1928.

A physical examination gave negative results. The Wassermann and Kahn reactions of the blood were negative, and the urine was negative for bromine by the Wile-Belote test. On the legs were several plaques, 2 cm. and more in diameter, with peripheral pustules and vegetative dermatitis with healing and healed centers. The centers were slightly atrophic and hyperpigmented.

TELANGIECTASIA (GENERALIZED). NEVUS (VASCULAR, GENERALIZED). Presented by DRS. M. H. EBERT and RUBEN NOMLAND.

A girl, aged 11, subnormal mentally, presented a skin condition which had been present and unchanged since birth.

Almost the entire body was involved in a bluish retiform telangiectasia, resembling severe cutis marmorata. Over the face, sternal region and dorsal surface of the left hand the color was bright red. The dorsal surface of the right hand was almost free from telangiectasis. Scattered over the torso were irregular bright red areas, which resembled nonelevated vascular nevi. The palms, except for the thenar eminence, the soles and the scalp were free from abnormal vessels.

The mother stated that in cold weather the color became purplish and in warm weather bright red.

DISCUSSION

DR. S. W. BECKER: The child is mentally inferior and has a fairly well generalized telangiectasia without other changes in the skin. I think that probably at the time of puberty she will begin to show definite endocrine disturbances, such as amenorrhea or defects in development.

DR. M. H. EBERT: The family history is entirely negative so far as we can ascertain.

LYMPHADENITIS (TUBERCULOUS) OF THE NECK. TUBERCULIDS (PAPULONECROTIC) OF THE EXTREMITIES. Presented by DR. J. H. MITCHELL and DR. RUBEN NOMLAND.

A poorly nourished negress, aged 29, had lymphadenitis of the right side of the neck of eighteen months' duration. The lesions on the legs had been present for two months.

Inspection revealed a fluctuant mass, the size of an egg, in the left supraclavicular fossa. On the left elbow was one, and on the right elbow three, small, crusted, indurated lesions with necrotic centers. On the left leg were half a dozen, and on the right leg one, lentil-sized and larger, fairly deep-seated indurated lesions, the size of a lentil and larger, some with a necrotic center. These lesions were situated on the posterior aspect of the lower third of the legs.

The Wassermann reaction was negative.

RINGWORM OF THE SCALP (?). Presented by DR. J. H. MITCHELL and DR. RUBEN NOMLAND.

A negress, aged 9, was first seen in 1926, when she and two brothers had ringworm of the scalp. Roentgen epilation was not complete, and in June, 1928,

she still had patches of scaling suggestive of a continuation of the infection. The present condition appeared about two months before presentation, and had remained practically without change.

Inspection showed a generalized, crusting, oozing dermatitis which involved the entire scalp. Search of potassium hydroxide preparations of epilated hairs was, positive and cultures revealed *Microsporon audouini.*

ST. LOUIS DERMATOLOGICAL SOCIETY

M. F. ENGMAN, JR., M.D., *Secretary*

Dec. 11, 1929

THEODORE GREINER, M.D., *Vice-President, Presiding*

BLASTOMYCOSIS OF THE SKIN AND LUNG. Presented by DR. GEORGE D. REEVES.

J. G., a white man, aged 51, from the Barnard Free Skin and Cancer Hospital, gave a history of being sick in bed with "lung trouble" the January previous to presentation. While he was in bed, he had a breaking out on his chin that began as an "ingrowing" hair. This eruption began slowly; a crust formed and peeled off, leaving a bright red surface on which another crust formed. This process continued until three weeks before presentation, when foul pus formed under the crust. After two or three weeks, another lesion appeared on the upper right arm and went through the same process as the one on the face.

There was a nodular papillary growth, deeply indurated, covered with thick adherent crust through which the beard was growing, located on the left point of the chin; it was about 5 by 3 cm. in diameter. The borders were thickened and violaceous and contained multiple minute abscesses. The surrounding skin seemed normal. When the crust was removed, it left a crater that appeared to be "gnawed out" with some granulation tissue and foul white pus. The lesion on the right arm was 3 by 3 cm. in diameter. It was not indurated, and the borders were not thickened like the lesion on the face. It was surrounded by a narrow margin of erythema and was covered by a thin brown crust. Since the onset in January, he had had a severe cough, which was worse in the morning. He coughed up a large quantity of darkly stained, viscid, foul-smelling, pus-streaked mucus.

The Wassermann reaction was negative. The blood and urine were normal. Roentgen ray observations indicated extensive inflammatory infiltrations, which appeared to be atypical of the usual chronic inflammatory type of absorption changes. Potassium hydroxide preparation of the pus from the lesion and the sputum showed many budding yeasts. The diagnosis was blastomycosis of the skin and lung.

DISCUSSION

DR. JOSEPH GRINDON: The slide submitted removes any possible doubt concerning this diagnosis.

DR. S. T. MILLARD, Topeka, Kan.: The lesion on the chin is typical so far as history and clinical appearance are concerned, and the microscopic specimen removes all doubt so far as this lesion and that of the pulmonary condition are concerned. But one could not make a diagnosis of blastomycosis from the clinical appearance of the lesion on the right arm. It appears more like an ecthyma. There is no raised edge with its characteristic purplish red halo, but the scab covering it is level with the surface of the skin.

DR. T. N. TOOMEY: I have lately read over the literature of the last several years on blastomycosis and coccidioidal granuloma, and have gained the impression

that the best opinion is drifting toward the acceptance of the respiratory tract rather than the skin as the primary focus of infection.

A Case for Diagnosis. Presented by Dr. George D. Reeves.

N. T., a man, aged 18, gave a history of a boil on his nose that would not heal seven years before presentation. This spread very slowly, and one day the septum in the nose came out. One year before presentation, the lesion started spreading down onto his lower lip. The spread had been slow and gradual: On examination, there was a large ulcerating area, the size of a palm, involving the lower half of the nose, the entire upper lip and about 1 inch (2.5 cm.) on each cheek. There was complete destruction of all tissues involved. There was a sharp line of demarcation between the normal and the diseased tissue. There was no induration or thickening of surrounding borders. The entire area was covered with thick, yellowish-brown crust, and there was a continuous drip of thin yellow pus from the dependant portion. The process did not involve the entire thickness of the upper lip, the mucous membrane of the mouth being intact and healthy.

Roentgenograms of the chest were negative. Examination of the urine gave negative results. The blood count showed: red blood cells, normal; white blood cells, 10,800; lymphocytes, 41 per cent; transitionals, 4 per cent; polymorphonuclears, 59 per cent, and eosinophils, 4 per cent. The Wassermann reaction of the blood was four plus.

DISCUSSION

Dr. Joseph Grindon: I think the condition is a lupus exedens, although I could not see any lupus nodules. It has progressed more rapidly lately than in the seven years since it began, perhaps owing to a secondary infection. The duration and the softness of the border are characteristic of tuberculosis. Of course the leukocyte count was high — 10,000 plus, for tuberculosis, but, as Dr. Stryker remarked to me, that might be due to the secondary infection.

Dr. T. N. Toomey: I think the condition is lupus. It certainly looks more like lupus exedens than blastomycosis. However, it looks mostly like an oronasal leishmaniasis or espundia. Of course the latter diagnosis is scarcely tenable, as the boy has never resided in a district where espundia occurs. On the other hand, it is not impossible that *Leishmania tropica* may at times be carried quite a distance outside of endemic areas, and Mexico is not so far off. I would certainly advise the trial of antimony and potassium tartrate intravenously, as the boy is in an extremely deplorable condition.

A Case for Diagnosis. Presented by Dr. George D. Reeves.

N. M., a white woman, aged 48, from the Barnard Free Skin and Cancer Hospital, had an eruption that appeared on the wrists two months previous to presentation, and which itched moderately. This was made up of shiny spots. The spots continued to appear on the wrists and thighs. Three days before presentation, a rash appeared on the elbows and arms. These lesions were entirely different from the others. Those on the backs of the hands were dark red, indurated and hypertrophic; those on the upper arms and elbows were very red and acutely inflammatory, and appeared to be grouped vesicles deeply seated, with considerable induration of the parts involved.

The patient was seen four days later. The lesions on the back of the hands and wrists were the same as when first seen, but those on the upper part of the arm were now not so inflammatory and appeared as superficial papules or nodules, hard and varying in size from that of a pea to that of a coin; they had continued to itch intensely.

DISCUSSION

Dr. Joseph Grindon: I am inclined to think it a parapsoriasis of the lichenoid type.

DR. C. W. LANE: I think that the eruption on the hands and wrists was a hypertrophic lichen planus. The lesions on the arms and thighs looked entirely different, probably belonging in the erythema group. They were today flat scaly plaques, whereas a few days ago these same lesions were indurated, infiltrated, and had a crusted surface as though from ruptured vesicles. The possibility of a drug eruption was considered, but careful questioning gave no clue.

DR. G. V. STRYKER: I agree with the diagnosis of lichen planus on the wrists and arms. I hesitate to make a diagnosis of two diseases. I think the later eruption, which has been present for a short time as scaly macules on the arms and thighs, is pityriasis rosea. It certainly conforms to it in shape and distribution, but is unlike it in color. Of course one did not find the typical scaling, and new lesions were appearing, but on close examination the new areas appear symmetrical, particularly on the thighs.

DR. C. W. LANE: The distribution is rather unusual for pityriasis rosea.

DR. G. V. STRYKER: I have seen it localized only on one thigh and on one extremity. I saw a case in which the disease appeared only on one thigh.

DR. T. N. TOOMEY: I think the patient has two conditions, an old lichen planus and an intercurrent eruption. The latter appears to be a retrogressing erythema multiforme. This opinion is strengthened by the report that the lesions were definite nodules only a few days before presentation.

DR. E. R. BROWN: My diagnosis is lichen planus. I think the other lesions are those of erythema multiforme.

DR. M. F. ENGMAN, JR.: The new lesions do not look like lichen planus. The old lesions on the wrists are not typical; they have not the color or configuration. One would expect to have the new lesions more typical of lichen planus. If the old and the new lesions are considered one condition, I should suggest the diagnosis of parapsoriasis.

DR. S. T. MILLARD, Topeka, Kan.: I believe there are two distinct conditions in this case. I agree with the diagnosis of lichen planus hypertrophicus for the eruption on the wrists and below the knee; the other condition, I believe to be erythema multiforme, not pityriasis rosea. In the latter disease, the lesions usually are shallow, smooth to touch, with somewhere about the trunk the so-called medallions, appearing ovoid in outline with the long axis of the lesion corresponding to the cleavage of the skin, and cigaret scale wrinkles transverse to the long axis of the lesion.

In 90 per cent of the cases of pityriasis rosea, the lesions do not appear above the clavicle, or below the knees or elbows. We see a great many cases of pityriasis rosea every year, and I think that in the Mississippi Valley there are probably more cases of this disease than in any other section of the country.

If one assumes that this patient exhibited nodular or deep papular lesions when exhibited a few days ago at the clinic, this would contravene a diagnosis of pityriasis rosea, because lesions of this disease are never so deep-seated. The evolution of these lesions from deep papular ones to shallow scaly lesions in four days suggests very strongly erythema multiforme.

MYCOSIS FUNGOIDES. Presented by DR. GEORGE D. REEVES.

M. J., a white woman, aged 58, from the Barnard Free Skin and Cancer Hospital, was presented at a former meeting as having a definite case of mycosis fungoides. She was kept in the hospital and given roentgen ray treatment over the ulcerated limb, and intravenous injections of 1 per cent antimony and potassium tartrate. She was dismissed from the hospital with the ulcers healed and improvement in the generalized dermatitis. She was dismissed on Sept. 8, 1929 and allowed to return to her home. She returned to the hospital on Oct. 11, 1929, with new erythematous areas on the backs of both hands, arms, trunk and limbs. They were very much more inflammatory than when first seen. On the right arm

between the elbow and wrist there were three new ulcers. The patient was put on routine treatment of antimony and potassium tartrate and is to be presented at a later date.

DISCUSSION

DR. C. W. LANE: Antimony and potassium tartrate is now being tried in all cases of mycosis fungoides at Barnard Hospital. It was instituted some time ago in an advanced case in which the patient had tumor formation and had become resistant and intolerant to the roentgen ray. The patient was extremely uncomfortable, and the only method of quieting him was with morphia. Following the first injection of antimony and potassium tartrate the pruritus stopped, and with continued therapy it ceased entirely. After his skin had cleared up, the patient developed pneumonia and died. Since then we have been trying this method, but it is too early to form definite conclusions as to its value.

DR. T. N. TOOMEY: I am not so sure that the improvement is entirely a coincidence. Aldo Castellani, in 1928 (A Pseudomycosis Due to a Coccus, ARCH. DERMAT. & SYPH. **18**:857 [Dec.] 1928), showed that a granuloma of hitherto unknown origin is caused by *Micrococcus myceticus*. He used an autogenous vaccine in his case, and clinical cure resulted, but it is not impossible that some such organism may be found in mycosis fungoides, and that the organism is susceptible to antimony medication.

URTICARIA PIGMENTOSUM. Presented by DR. GEORGE D. REEVES.

V. Y., a white man, aged 16, from the Barnard Free Skin and Cancer Hospital, presented himself complaining of an eruption on the chest, neck and scalp, which his mother said had been present all of his life. At times it itched a great deal, and when he scratched the eruption became red and nodular.

On examination, he was found to have a maculopapular eruption over the chest, abdomen, neck and scalp. No lesions were found on any other part of the body. The papules were hard, but the bases were not indurated. They ranged in size from that of a split pea to that of a pea and were dusky red. The macules appeared mostly on the shoulders and the upper portion of the chest. They appeared as dark brown pigmented areas ranging from 1 to 2 cm. in size, giving the shoulders a spotted appearance. When the macules were gently rubbed with a piece of gauze, they became erythematous wheals. Rubbing or scratching any part of the body produced marked wheal formation, with intense itching.

Urinalysis showed a trace of sugar. The blood count was: red blood cells, normal; white cells, 11,200; lymphocytes, 64 per cent; transitionals, 0.2 per cent; polymorphonuclears, 36 per cent and eosinophils, 0.1 per cent. Biopsy showed acute inflammation, granular element, with linear arrangement of mast cells.

The diagnosis was, urticaria pigmentosum.

Regular Meeting, Jan. 8, 1930

R. S. WEISS, M.D., *President, in the Chair*

LICHEN PLANUS. Presented by DR. GEORGE D. REEVES.

W. B., a man, aged 58, from the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, was presented as having an unusual case of lichen planus. He had the typical flat-topped angular, papular lesions with violaceous coloration, limited only to the lateral aspect of the left leg. He also had the mother-of-pearl film on the buccal mucosa and lips and on the tip of his tongue.

DISCUSSION

DR. C. W. LANE: I believe that it is an unusual case of lichen planus, with lesions not only on the leg and tongue, but also on the mucous membranes of the lips and the margins of the gums where the plates rub.

DR. R. S. WEISS: It ought to be emphasized that lichen planus on the vermilion borders of the lip is rare.

GRANULOMA OF THE TONGUE. Presented by DR. GEORGE D. REEVES.

C. R., a white woman, aged 45, from the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, came to the hospital on Dec. 17, 1929, with a large punched-out ulcer involving the whole of the anterior half of the tongue. The tongue was so enlarged that on talking or swallowing she had to stick the mass out of her mouth and hold it in her hand. She was barely able to get it in and out of her mouth. She had a negative Wassermann reaction. Clinically, the case was syphilis; histologically, it was not, but at the time of presentation, following a month of antisyphilitic treatment, the ulcer had practically healed with little scar formation.

DISCUSSION

DR. R. H. DAVIS: I think that the condition is the result of the treatment for syphilis.

DR. A. H. CONRAD: This case again illustrates the necessity of giving antisyphilitic treatment in cases in which the lesion has the appearance of being syphilitic, even though the Wassermann reaction is negative.

DR. R. S. WEISS: In my opinion the patient is not yet out of danger. Healing of the granuloma of the tongue with its consequent scar provides a possibility for the formation of a carcinoma later on. I know of several cases of syphilitic granulomas in which healing of the tongue under treatment was promptly followed by carcinoma.

DR. NOXON TOOMEY: I had such a case two or three years ago.

DR. R. H. DAVIS: It is true that often in those lesions about the mouth there is a negative Wassermann reaction. A patient with a similar case of ulceration came to me about two years ago. The Wassermann reaction was negative. I paid no attention to the report and treated the patient as having a staphylococcus infection. The patient did not get any better. Later he came back to me with the lip completely healed. On inquiry, he said that Dr. Engman had given him some medicine. Dr. Engman said that he made up his mind to pay no attention to the Wassermann reaction, and to treat the patient for syphilis.

DR. NOXON TOOMEY: About 30 per cent of all cases of many years' duration give negative Wassermann and precipitation reactions, and continue to give them even in the presence of localized syphilitic activity.

DR. R. H. DAVIS: I have, and so have most of us, the tendency to place too much emphasis on the Wassermann report.

DR. R. S. WEISS: The report was chronic inflammatory tissue. No diagnosis of carcinoma was made. Often such a report is made in these cases.

DR. GEORGE D. REEVES: No appreciable amount of the organisms of Vincent's angina were found in the smears, no more than in any smear from the mouth.

TWO CASES OF MYCOSIS FUNGOIDES. Presented by DR. GEORGE D. REEVES.

Mrs. D. and Mrs. J., from the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, were presented at the meeting of Dec. 11, 1929. Their cases were diagnosed as mycosis fungoides. They were presented again to show the progress of treatment with antimony and potassium tartrate. They both showed decided improvement over the last presentation. The dermatitis was not so erythematous, and the patients did not complain of such severe itching.

DISCUSSION

DR. NOXON TOOMEY: I think that antimony and potassium tartrate has a permanent place in the treatment for mycosis fungoides. I should institute therapy with that and hold the roentgen ray in abeyance.

DR. R. KRING: I had some experience in two cases in which I used nothing but the roentgen ray. Dr. Davis, Dr. Grindon and Dr. Greiner saw one of the cases more than six years ago. I have treated the patient probably for a year with nothing but roentgen therapy and plain iron internally, and she is completely well. I had another case before I left of beginning mycosis fungoides. Nothing but roentgen therapy was used. Since I returned, the patient has had no more lesions.

DR. R. H. DAVIS: I do not think that there would be any question about Dr. Kring's first case if you had seen it as we did several years ago.

DR. A. H. CONRAD: We all know that roentgen therapy will go far in the way of treatment for mycosis fungoides. I think that it would be advisable, judging from the result we have obtained here, to use antimony and potassium tartrate first and to hold the roentgen ray in reserve, because there is a possibility of reaching a tolerance with the latter. From experience in only four cases, I believe that antimony and potassium tartarate has some place in the therapy for mycosis fungoides.

DR. C. W. LANE: It must be remembered that in mycosis fungoides there is a tendency toward relapses and improvements under mere hospitalization, so that we cannot become too enthusiastic in the short time we have tried this method. It apparently has some effect, as indicated by the relief from subjective symptoms, not only in the case in which the patient was hospitalized, but also in the patient treated in the outpatient clinic.

DR. NOXON TOOMEY: There is no severe reaction following treatment with antimony and potassium tartrate.

DR. A. H. CONRAD: The first patient died of septic pneumonia, possibly from liberation of toxins in the tissues that might have given him the septic pneumonia.

DR. R. KRING: Concerning the danger of the roentgen ray, I gave a patient one-fourth unit over one fourth of the body at each treatment, treating a different portion of the body each time. She has never had a reaction. I treated her for about a year. I am not sure, without referring to the record, whether she came every week or missed one or two. There was never any bad effect from the action of the roentgen ray.

A CASE FOR DIAGNOSIS. Presented by DR. GEORGE D. REEVES.

B. M., a white woman, from the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, presented an unusual skin condition. She was to have a biopsy and would be presented at the next meeting. She gave a history of a breaking out on her body that started four years previously as little bumps that itched. She said that it resembled a nettle rash. These bumps would dry up and leave scars. At the time of presentation she had a generalized, atrophic, pigmented, dark brown dermatitis involving the entire body, including the face. The involved portion was covered with a thin crinkled scale. Interwoven throughout the atrophic portions were strands of apparently normal skin, giving the whole a variegated appearance.

DISCUSSION

DR. A. H. CONRAD: I think that they are atrophic lesions on the body and limbs.

DR. NOXON TOOMEY: The condition so closely resembles poikiloderma atrophicans vasculare that a diagnosis of that disease is entirely justified. The question is, what is the relationship of it and perhaps a lichen planus that takes that particular form? Are they really separate diseases? There is a great need to have the rarer dermatoses, especially the atrophies, seen at the very beginning

by competent dermatologists. When they are, we may come to learn that they are not separate diseases, but only atypical and bizarre end-results of well known inflammatory diseases.

DR. RICHARD KRING: I have treated a woman in the office for lichen. It was a positive case. I used the Kromayer light, and the eruption faded. I felt that it was an atrophic condition of the skin, a variegata keratosis.

DR. NOXON TOOMEY: I am sure that there is never that much atrophy in porokeratosis variegata.

DR. M. F. ENGMAN, JR.: This case is much like that of a man who was presented some time ago, which was called poikiloderma.

DR. R. S. WEISS: I shall ask Dr. Lane to make a biopsy at the next meeting, taking one specimen from one of the old lesions and another from one of the apparently newer lesions.

SYPHILITIC LESION. Presented by DR. GEORGE D. REEVES.

N. T., a white man, from the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, was presented at the meeting of Dec. 11, 1929, with a granulating lesion of seven years' duration involving the nose and upper lip. At that time no diagnosis was made. Clinically and histologically, it was not syphilis, but at the time of presentation the lesion had practically healed under antisyphilitic treatment.

DISCUSSION

DR. R. H. DAVIS: I thought that the condition was blastomycosis at first, as it looked more like that than like syphilis.

All agreed that the case was one of syphilis.

GRANULOMA INGUINALE. Presented by DR. GEORGE D. REEVES.

W. I., a white man, aged 30, had been referred to the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, from another clinic where he had had various tissue examinations and laboratory work with negative reports for carcinoma and with a tentative diagnosis of granuloma inguinale. He gave a history of a small sore on the penis that started about two years prior to presentation after a scratch from a pin. The scratch wound started to grow slowly, and had been painful and progressive. During the past two years, he had been treated by many physicians, and various methods of treatment had been used, including cautery, ultraviolet irradiation, roentgen therapy local applications of various kinds, baths, antisyphilitic treatment and antimony and potassium tartrate. At the time of presentation he had an extensive ulceration involving the entire penis and back on to the adjacent portion of the abdominal wall. The process had destroyed all of the skin and a portion of the glands and cavernous tissue. The borders of the ulcer were smooth, clean, granulating tissue with little discharge and no odor. A smear from the wound was negative for Donovan bodies. Examination of the tissue showed nothing more than acute and chronic inflammatory tissue. The Wassermann test of the blood gave negative results.

DISCUSSION

DR. NOXON TOOMEY: It occurred to me that the condition might be Paget's carcinoma.

DR. E. C. BROCKELMANN: In my opinion, this is a case of either chronic phagedenic ulcer or gangrenous balanitis. Further studies of the case are necessary.

DR. M. F. ENGMAN, JR.: The condition may be granuloma inguinale.

DR. NOXON TOOMEY: I thought that the reports of the pathologic studies made in the south and the apparent ineffectiveness of antimony and potassium tartrate medication rather definitely excluded granuloma inguinale.

DR. M. F. ENGMAN, JR.: That was the diagnosis given by the clinic where he had been treated before. We do not know how much antimony and potassium tartrate he has had.

DR. GEORGE D. REEVES: The patient said that he had had 5 cc. of a 1 per cent solution every day.

DR. NOXON TOOMEY: The lesion is too clean to be granuloma inguinale. It does not have the dirty gummous erosion and undermining around the borders. The borders are pearly, and the base has the peculiar clean mammillate and glazed appearance of a slow-growing superficial carcinoma. I am confident that whatever condition the patient may have, the scar has become carcinomatous.

DR. R. S. WEISS: My idea of granuloma inguinale is certainly not the condition presented; I have in mind an elevated border, heaped up and rolled, which looks like a border of epithelioma. The condition looks like epithelioma and has time and again been so diagnosed. If you present a section of such a case to a general pathologist, he will nearly always make a diagnosis of epithelioma.

LICHEN PLANUS AND ERYTHEMATOUS NODULAR DERMATITIS. Presented by DR. GEORGE D. REEVES.

Mrs. M., from the Barnard Free Skin and Cancer Hospital, service of Dr. Engman and Dr. Mook, had been presented at the Dec. 11, 1929, session, with a diagnosis of lichen planus on the hands and wrists, and a different erythematous nodular dermatitis on the upper arms. At that time, no diagnosis had been made of the dermatitis on the arms. At the time of the second presentation, the dermatitis had completely disappeared.

DR. R. H. DAVIS: The question is whether or not the lesion on the knee is one of lichen planus. I thought that it might be neurodermatitis. I just made that statement as a suggestion. It might be lichen planus hypertrophicans, as Dr. Weiss suggests.

DR. GEORGE D. REEVES: It is apparent that this is a case of lichen planus. The question was about the lesions on the arms.

DR. R. H. DAVIS: Was this the woman presented at the last meeting?

DR. R. S. WEISS: Yes. Various diagnoses were made, as parapsoriasis, erythema multiforme, pityriasis rosea, etc.

DR. C. W. LANE: This has been a puzzling case. The eruption present is definitely lichen planus. The eruption that faded did not correspond to any of the usual clinical pictures. It suggested to me a diagnosis of drug eruption, although the history was indefinite on that score.

PITTSBURGH DERMATOLOGICAL SOCIETY

LOUIS WILLARD, M.D., *Secretary*

Cases Taken from January, February and March Meetings, 1930

HOWARD T. PHILLIPS, M.D., *President*

Jan. 16, 1930

SELECTED CASES

PAPULONECROTIC TUBERCULID. Presented by DR. H. T. PHILLIPS.

Mrs. C. D. S., aged 27, presented lesions over the ankles and feet that had been present at intervals for ten years. At first the lesions were flesh-colored, then they changed to a brownish red and tended to suppurate in the center, forming

a depressed crust which when removed, left a scar with atrophy and pigmentation. The lesions were extremely painful and required from six to eight weeks to heal.

DISCUSSION

DR. L. HOLLANDER: I do not agree with the diagnosis. The patient is suffering from a chronic pyogenic infection taking the form of ecthyma.

DR. W. H. GUY: This condition looks like an erythema induration of the small lesion type.

DR. F. AMSHELL: The rounded, punched-out, smooth scars suggest neurotic excoriations. I should use an occlusive dressing, a zinc gelatin cast to eliminate the possibility of further trauma.

DR. S. CRAWFORD: The lesions are too well healed to allow of a positive diagnosis, but the scars are indicative of papulonecrotic tuberculid.

EPITHELIOMA. Presented by DR. C. B. NORRIS.

Miss C., aged 25, was successfully treated in 1924 and 1925 for pustular acne. In July, 1929, she presented on the left cheek a painful lesion resembling a furuncle, which had been treated by three applications of radium.

DISCUSSION

DR. F. B. MILLER: The patient gives the history of crusting and progressive enlargement with a well marked pearly edge, which confirms the diagnosis.

DR. L. HOLLANDER: The question of the rôle of the roentgen rays in the treatment for acne is of great importance. I should advise excision of the lesion with a radio-knife.

GRANULOMA ANNULARE. Presented by DR. F. B. MILLER.

A colored girl, aged 2, from the service of Dr. Guy at the University Dispensary, presented on the back of each hand and on the dorsum of the right foot, a smooth irregularly annular lesion about 3 cm. in diameter, slightly elevated and reddened, and sharply marginated. Several cresentic lesions of a similar type were present in the right hypochondriac region. Apparently there were no subjective symptoms.

The duration was six months, the lesions on the hands preceding those elsewhere by several weeks. The patient had had symptoms of rachitis since the age of 6 weeks. There was no family history of tuberculosis, but the patient had had a cough for some days and was referred to the medical department for examination. Wassermann and Kahn tests gave negative reactions.

DISCUSSION

DR. W. H. GUY: This case is interesting on account of the exceptionally numerous lesions and the similarity to annular congenital syphilis.

DR. E. GILLESPIE: I agree with the diagnosis. These lesions have been hard for me to clear up with roentgen therapy, but carbon dioxide snow has given fine results.

DR. H. G. WERTHEIMER: Although this condition suggests annular syphilis, I believe that the given diagnosis is correct. The distribution of the lesions is most unusual.

DR. L. HOLLANDER: A biopsy should be made to exclude tuberculosis. That is the question that should be cleared up.

DR. S. CRAWFORD: I think that this is probably erythema multiforme.

DR. F. B. MILLER: I think that the diagnosis is correct. The lesions have remained as at present for from four to six months without a tendency to recurrence or exacerbation. They are few in number and of but a single type.

SELECTED CASES

SECONDARY SYPHILIS DEVELOPING DURING ARSENICAL MEDICATION. Presented by DR. W. H. GUY and DR. F. M. JACOB.

A man, aged 22, first seen Nov. 10, 1929 with a primary lesion, was given 0.6 Gm. of neoarsphenamine every five days for four injections when an annular erythematous eruption appeared on the face and neck. Treatment with neoarsphenamine at the same interval and dosage was continued to a total of nine injections, at which time a lichenoid papular eruption appeared, scattered over the body but mostly on the arms. *Spirochaeta pallida* was recovered from one of these lesions by dark-field examination.

NOTE.—The eruption subsequently promptly disappeared under the administration of arsphenamine and mercury.

DISCUSSION

DR. L. HOLLANDER: What make of neoarsphenamine was used? I think that the patient ought to be treated with old arsphenamine which will be found to be much more therapeutically efficient.

DR. E. GILLESPIE: I have seen even moist lesions develop while the patient was being treated with neoarsphenamine.

DR. W. H. GUY: The condition is definitely a secondary eruption developing during the administration of neoarsphenamine. I feel that the cause may reside in the patient himself — that is, the relative development of immunity. As to the drug, such complication might not have developed had one of the heavy metals been utilized with the arsenical. The report from the hygienic laboratory on toxicity was of value with reference to safety, but a much greater service could be rendered by testing the therapeutic index as well. Larger dosage of the arsenical, which had a low toxicity, might have overcome to some extent any objection from a chemotherapeutic standpoint.

A CASE FOR DIAGNOSIS. Presented by DR. H. T. PHILLIPS.

A girl, aged 20, presented on the body about 100 macular and about 20 elevated lesions of ten years' duration. They varied from the size of a pea to areas as large as a half dollar, and were a reddish brown. The largest elevated, wrinkled lesions were between the shoulder blades, on the right flank and under the right breast. These were flabby in consistency and could be rolled between the fingers. Ten years ago there appeared a small brown spot over the right side of the chest, which became raised, hard and shiny and after attaining the size of a pea, became flabby and changed in color to a reddish brown. The development of all the elevated lesions had shown the same evolution.

DISCUSSION

DR. S. CRAWFORD: I consider this a pre-eruptive neurofibromatosus with a majority of the lesions of the pigment type and three lesions of the tumor formation of this disease. There is a suggestion of atrophy of the macular type in most of the lesions.

DR. W. H. GUY: Except for the difficulty of correlating the clinical picture with the histology of this case, I should favor a diagnosis of sarcoid.

DR. F. M. JACOB: Some of these raised lesions are strongly suggestive of von Recklinghausen's disease.

DR. L. G. BIENHAUER: There is itching present at times in some of these lesions, and I should be inclined to favor the diagnosis of urticaria pigmentosa of adult type.

DR. L. HOLLANDER: I think that Dr. Bienhauer is right, for after friction there is edema in the lesions.

DR. H. T. PHILLIPS: From a section at the Vanderbilt Clinic they made a diagnosis of xanthoma, but I favor one of von Recklinghausen's disease.

A CASE FOR DIAGNOSIS. Presented by DR. W. H. GUY and DR. F. M. JACOB.

A laborer, aged 67 presented an eruption limited to the palms of the hands, the fingers, and the left ankle and the foot. The condition was of over thirty years' duration. The palms presented a diffuse, thickened, adherent scale-covered, low grade inflammatory process. The adherent scale in places dipped into the follicular orifices. The fingers were red and swollen. The left foot presented sharply marginated, fine, scale-covered patches on the dorsal surface and on the ankle. Secondary atrophic changes were present.

DISCUSSION

DR. F. AMSHELL: I believe that this is a case of tertiary syphilis because of the long duration, the tendency to be unilateral and the serpiginous outline of the lesions with the characteristic atrophy.

DR. G. BUSMAN: I consider the case as one of an old tertiary nodulo-ulcerative syphilis. The serpiginous configuration, the color, the atrophy, the tendency to unilateral severity and the age factor all fit in well with the diagnosis of syphilis. Extension between fingers and to back of hands is not unusual in palmar syphilis. He also has leukoplakia of the tongue and the buccal surfaces. I should advocate mild treatment with mercury and iodides because of his age.

March 20, 1930

SELECTED CASES

BESNIER'S PRURIGO. Presented by DR. S. CRAWFORD.

A girl, aged 8, since the age of 6 months had presented a chronic, diffuse, reddish-yellow, thickened, itching dermatitis with some scaling and areas of marked papulovesiculation about the neck, in the elbow flexures, extending upward over the biceps and downward over the anterior forearms, and over the back of each knee. The trunk, thighs and legs showed some mottled yellowish staining from a similar previous eruption. The skin was dry. The hair was rather coarse and dry. As the result of habit, her neck and shoulders were held in a fixed position. There was no history of asthma.

The child was presented for discussion as an example of the eczema-urticaria-ichthyosis-asthma syndrome.

DISCUSSION

DR. W. H. GUY: I considered the case one of an ichthyosis with secondary dermatitis. The patient and the father too had dry skin and dermatitis during the winter months only.

DR. L. HOLLANDER: Asthma develops later in many allergic types of dermatitis. Such patients have improved under treatment with thyroid and they can tolerate large doses.

DR. S. CRAWFORD: I appreciate the discussion. These cases are preceded usually by infantile eczema and associated later with asthma. A dose of thyroid of 1 grain (0.065 Gm.) daily yields good results.

LICHEN PLANUS. Presented by DR. H. T. PHILLIPS.

A girl, aged 4½ years, presented lesions of more than three months' duration, more or less generalized and at first very pruritic. The lesions were glistening papules of pinhead size that were mostly discrete, but in some areas had coalesced

to form rough, scaly patches. The itching of the eruption had been almost eliminated by two roentgen treatments. The patient was apparently in the best of health.

DISCUSSION

DR. W. H. GUY: Lichen scrofulosorum, lichen nitidus and lichen planus should be differentiated. The distribution of the lesion and the age of the patient were factors which weighed against a diagnosis of lichen nitidus. The chronicity and lack of crops were factors against a diagnosis of lichen scrofulosorum. In favor of a diagnosis of lichen planus was the presence of linear lesions in scratch marks.

DR. E. GILLESPIE: This patient's age is against a diagnosis of lichen planus and in favor of lichen scrofulosorum. The typical color of lichen planus is not present. The lesions have a grouping seen in lichen scrofulosorum. There are no subjective symptoms and a slight scaling is present, as in lichen scrofulosorum. A biopsy would differentiate lichen planus and lichen scrofulosorum.

DR. F. B. MILLER: The diagnosis of lichen planus seems to be the most logical in this case, although according to his mother's statement, the child has had no subjective sensations whatever since the present lichenoid condition began to develop, and there is none of the violaceous change which one would expect, after a duration of two months.

DR. S. CRAWFORD: I do not think that the child has lichen planus as the lesions are not polygonal but are rather small, pink, follicular papules like trichophytid resulting from a blood stream invasion with spores. I believe that the original epidermal redness and scaliness was due to a fungus.

FOLLICULITIS ULERYTHEMATOSA RETICULATA. Presented by DR. H. G. WERTHEIMER.

A schoolgirl, aged 15, presented on both sides of the face and glabella numerous, symmetrically arranged, closely crowded, small areas of atrophy separated by narrow ridges producing a reticulated, honeycombed or network appearance. The individual atrophic areas were pitlike and very abrupt—varying in size from that of a pinpoint to that of a small split pea. A few of the atrophic areas resembled a chickenpox scar. A few small comedones, but no milium-like bodies were noted in the ridges. The skin covering the ridges was on a level with the unaffected portion of the face and looked waxy, somewhat stretched and harder than the normal skin. On close inspection with the magnifying glass, redness, apparently due to fine dilated capillaries, was discernible. The nasolabial region, which was oily, presented a few comedones. There was no history of papules, pustules, vesicles or injury, or of chickenpox or smallpox. The condition had been present for about five years, starting with a slight roughness and redness and followed by the aforementioned symptoms.

DISCUSSION

DR. W. H. GUY: I agree with the diagnosis. This case is very similar to the case reported by MacKee and Parounagian, except for the absence of milia.

ACUTE LUPUS ERYTHEMATOSUS. Presented by DR. L. HOLLANDER.

A married woman, aged 36, presented an eruption affecting the upper extremities, face, neck and sternal portion of the chest. The eruption appeared as an erythema and was composed of various types of plaques. On the arms one saw individual lesions which were rounded, scale-covered and shiny. In some areas the lesions were of a slightly papular contour. There were lesions on the mucous membrane. Under the tongue there was a small ulcer and on the buccal mucosa, a gray-covered, flat plaque that was extremely sensitive.

The patient presented a marked infection of the teeth and gums. There were a few dead teeth, and retracted tonsils which were infected. The anterior cervical glands were palpable.

It was noteworthy that under actinic ray therapy, which the patient carried out herself, she became decidedly worse.

The Wassermann and Kahn tests of the blood were both negative.

On three different occasions the patient showed a leukopenia and a moderate lymphocytosis.

DISCUSSION

DR. G. BUSMAN: This is another of the interesting cases of acute generalized lupus erythematosus rather than the so-called lupus disseminatus. It is not the type that rapidly becomes extremely toxic and that is accompanied by nephrosis and usually death. In this case, after the removal of the foci of infection of the mouth and alkalinization, the patient can safely be given gold thiosulphate.

DR. S. CRAWFORD: The condition is apparently an acute disseminated erythematous lupus of marked toxicity with destruction of the white cells. The facial puffiness may be due to a nephrosis, and I should recommend placing the patient in bed at absolute rest for some time.

DR. W. H. GUY: I agree that the underlying cause is skin sensitization due perhaps to the infection of the mouth, but I do not feel that the diagnosis is entirely justified on the basis of the clinical picture.

DR. L. HOLLANDER: The presence of lesions in the mouth, the lack of vesiculation, and the presence of slight amount of scaling indicate lupus erythematosus.

CARCINOMA EN CUIRASSE. Presented by DR. L. HOLLANDER.

A white woman, aged 55, a housewife, presented an infiltration affecting both breasts and extending laterally to the midaxillary lines. The overlying skin had a pigskin appearance and showed a slight amount of erythema. The nipples were retracted and covered with a pussy black discharge. A few hard, red, neoplastic nodules were scattered over the area. There was axillary glandular enlargement. The teeth and tonsils were infected.

DISCUSSION

DR. S. CRAWFORD: I agree with the diagnosis. This type of carcinoma is disseminated through the capillaries and gives us little hope that anything can be done for the patient's relief.

DR. G. BUSMAN: Even with the likelihood that she will develop a generalized carcinoma, I should advise deep roentgen therapy—it offers at least some increase in life expectancy and probable relief from some of her discomfort.

DR. L. HOLLANDER: An interesting point is that her trouble began with a generalized urticaria—later an infiltration occurred about the breast and slowly developed to its present state. Deep roentgen therapy will be given.

CLEVELAND DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Jan. 23, 1930

C. L. CUMMER, M.D., *Presiding*

PEMPHIGUS (?). Presented by DR. COLE and DR. DRIVER.

J. W., a man, aged 42, had been presented previously before the society. The condition was of eleven months' duration, and the patient had been under observation since May, 1929. For the first two months, the Davis treatment had been given, for the next two weeks solution of potassium arsenite, for four months tryparsamide (2 Gm. in all) and finally coagulin.

DISCUSSION

DR. NETHERTON: He now shows improvement.

DR. BARNEY: Such cases are often seen, with characteristics of both pemphigus and dermatitis herpetiformis. The pruritus speaks for the latter, but the type of bullae, the emaciation and the involvement of the mucosae would favor a diagnosis of pemphigus.

DR. PARKHURST: The pruritus, small size of the vesicles and pigmentation are suggestive of dermatitis herpetiformis, and in this condition vesicles may occur in the mouth. The condition of the palms and soles was interesting.

MALIGNANT SYPHILIS. Presented by DR. COLE and DR. DRIVER.

N. Q. a man, aged 79, had first come under observation in August, 1929, with primary syphilis and acute gonorrheal urethritis, the Wassermann reaction then being negative. Mercurial inunctions, potassium iodide and arsphenamine had been administered until October 17. In November the patient had returned with catarrhal jaundice and a strongly positive Wassermann reaction and had received iodides and mercurial rubs, and in December injections of mercuric salicylate were given. Following this treatment, iritis, stomatitis, penile lesions and an eruption involving the hands had appeared. The Wassermann reaction continued strongly positive.

DISCUSSION

DR. DRIVER: This is a case of malignant syphilis occurring in an old man with very little resistance.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

G. W., a negress, aged 16, stated that six months previously small red "pimples" had appeared on the hands and arms, the eruption having rapidly become generalized. Tender, pruritic and excoriated, the lesions had become large and crusted, the trunk remaining relatively unaffected. There were signs of congenital syphilis, and the Wassermann reaction of the blood and spinal fluid was positive.

DISCUSSION

DR. LITTMAN: She has presented the same picture for six or eight weeks, and we have considered it probably an impetiginous eruption. Vaginal smears have shown no gonococci. I would suggest that silver nitrate be applied.

DR. PARKHURST: The appearance of the eruption, together with the arthritis of several joints, is strongly suggestive of keratoderma blennorrhagica.

DR. OSBORNE: I agree with Dr. Parkhurst, and would continue the investigation.

DR. BARRETT: I favor a diagnosis of ecthyma.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

P. W., a man, aged 42, stated that one year previously he had first noticed two small papules on his left cheek. These papules, traumatized by shaving, spread peripherally. Four months before the time of presentation, a form of electric treatment was said to have been applied, and seven weeks later a red elevation had appeared at the border of the scar. This ridge persisted. A similar lesion was said to have been "burned off" the right cheek and chin four years previously, by means of electricity, with no recurrence. For eighteen years the patient had been employed in putting green bricks into a kiln.

DISCUSSION

DR. LA ROCCO: This condition seems to be either lupus erythematosus or blastomycosis, and I favor the latter diagnosis because of the history.

TULAREMIA. Presented by DR. LITTMAN.

Miss J. V., aged 22, a seamstress, had first been seen two weeks previously, with a sore finger. This lesion had appeared about November 15, without any knowledge of trauma. The patient said that she had had a fever during the interval. There had been a large granulomatous ulcer on the palmar side of the distal phalanx of the right index finger, and a mass, the size of a fist, of subacutely inflamed lymph nodes in the right axilla. Roentgenographic studies revealed no involvement of the bone. The Wassermann reaction was negative. Blood agglutination for *Bacterium tularense* was reported positive (1:1,280) by the laboratory of Dr. Francis in Washington.

DISCUSSION

DR. NETHERTON: In tularemia the primary lesion usually has a punched-out, necrotic center. The diagnosis was confirmed by the agglutination test.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

L. J., a negro, aged 33, presented a progressive, small, papular eruption on the sides of the neck, of fourteen months' duration, and a glossitis of six months' duration. The tongue was thickened, red and tender. The Wassermann reaction had been strongly positive, and the syphilitic infection, presumably of nine years' duration, had been treated during the previous two years. Roentgenologic studies showed pulmonary consolidation, and acid-fast bacilli had been found in the sputum. The tongue had been treated twice with the roentgen rays, and gold sodium thiosulphate was being administered.

DISCUSSION

DR. GILLESPIE: All of the lesions seem to be tuberculous.

SCROFULODERMA. Presented by DR. COLE and DR. DRIVER.

O. F., a negro girl, aged 8, presented four small to medium coin-sized, indurated, brownish ulcers on the cheeks and in the anterior triangle of the neck. Originally there had been cervical lymphadenitis.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

O. M., a negro, aged 30, had first been seen with primary syphilis four years previously; eighteen intravenous injections had been given. At about that time the patient had first noticed "soreness" about the anus; it had persisted, with several brief remissions. There were ulcers about the scrotum and anus, and leukoderma and hyperpigmentation of the chest, neck and arms.

DISCUSSION

DR. DEWOLF: The lesions appear to be tuberculous rather than syphilitic, and there is also pulmonary involvement.

DR. RAUSCHKOLB: The leukoderma followed the syphilitic eruption, and the present ulcers have developed subsequently. I consider them syphilitic.

RADIODERMATITIS. Presented by DR. FISHER.

Miss H. G., aged 42, the sister of a physician, stated that six years previously she had been given one roentgen treatment for moderate facial hypertrichosis, by a roentgenologist in New York. Six months later telangiectasia had first been noticed. The face and adjacent parts of the neck showed atrophy and considerable telangiectasia. Therapeutic suggestions were requested.

DISCUSSION

DR. PARKHURST: There is not much atrophy, and I should think that a good result might be obtained by destroying the telangiectases by electrodesiccation.

DR. OSBORNE: Electrolysis or electrodesiccation might cause more scarring. Therefore, I advise skin grafting.

DR. FISHER: I think that it would be best to let the condition alone. I have heard it said that telangiectasia does not follow one roentgen treatment. This patient has had only one treatment.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

S. S., a man, aged 44, presented an eruption of erythematous macules, only the head being exempt; there was one lesion in the mouth. The eruption had appeared on the extremities, with pruritus, on the day after two chocolate coated laxative tablets had been taken.

DISCUSSION

DR. CARSON: The history suggests dermatitis medicamentosa.

DR. PARKHURST: The color of the lesions is suggestive of erythema toxicum, but it may be a phenolphthalein eruption.

A CASE FOR DIAGNOSIS. Presented by DR. NETHERTON.

Mrs. F. S., aged 50, had been in good health, with the exception of frequent attacks of quinsy. She had been taking Nature's Remedy tablets nightly on account of severe constipation. Her eruption was of sixteen years' duration. She had first noticed a red scaly patch, the size of a dime, on the lateral surface of the right thigh. Other plaques had appeared from time to time until finally the trunk, extremities and anterior surface of the neck, and especially the thighs and lateral surfaces of the trunk, were involved. The lesions were large and small coin-sized, well defined, superficial, yellowish pink to light red scaly plaques. On the trunk and upper extremities the plaques were mostly round and very superficial, and the scaling was of a small gray adherent type. The lesions on the thighs were thicker than those on the trunk, apparently due to edema rather than to an induration of the tissue, and the scales were larger than those on the trunk and extremities. There was no itching. The scalp, elbows and knees were not involved. The eruption had not yielded to local applications.

DISCUSSION

DR. PARKHURST: In view of the color, type of scaling and rebellious nature of the eruption, I consider this a case of parapsoriasis en plaques. The pruritus, configuration and infiltration of mycosis fungoides are absent, and the color is not that of a phenolphthalein eruption.

DR. NETHERTON: I agree that this is parapsoriasis en plaques rather than mycosis fungoides or a phenolphthalein eruption.

DERMATITIS MEDICAMENTOSA (IODIDES). Presented by DR. COLE and DR. DRIVER.

E. S., a woman, aged 22, presented several large shallow ulcers on the anterior surface of both legs, together with bullae and edema, and pustules on the chest. She had been taking a proprietary blood tonic ("S. S. S.") for eleven months.

DISCUSSION

DR. MISKJIAN: The patient has been taking drugs. There are large infiltrated macules on the legs, with scarring in places. Some papules on the other parts are suggestive of lichen planus, and the condition might be lichen planus hypertrophicus. It seems too much infiltrated for a phenolphthalein eruption, but it may be due to bromides.

DR. BARNEY: The sharp outline of the lesions on the legs is striking. The bullae reappear when the patient is up and about, suggesting a dermatitis factitia.

DR. DEWOLF: The patient said that she had applied tincture of iodine.

DR. OSBORNE: I think that the lesions on the forearms are those of lichen planus. There are no bullae at present. Bullae may occur in lichen planus, or they may be due to applications.

DR. FISHER: The lesions on the legs are suggestive of a drug eruption, while those on the forearms are typical of lichen planus.

DR. RAUSCHKOLB: I think that the bullae were due to the iodine applied. The eruption cleared up once under treatment for scabies. A biopsy examination will be made.

A CASE FOR DIAGNOSIS. Presented by DR. COLE and DR. DRIVER.

J. C., a man, aged 36, stated that the right side of his lower lip had been painful for three weeks, and that the lip had gradually swollen. For two months prior to the onset of the pain, one of the left cervical lymph nodes had discharged a thick, oil-like, yellow pus, healing at about the same time as the involvement of the lip began. Twelve years previously the patient was said to have had a similar trouble, with pain and swelling, in the left side of the lower lip. At that time he had been in the Italian army in the Balkan region. A section of lip had then been excised, but as it healed the regional lymph nodes had enlarged, the enlargement having persisted. About two years before the time of presentation a swelling of the right side of the neck had begun to discharge yellow pus, continuing for a month. Roentgenologic studies of the jaw showed no involvement of the bone.

DISCUSSION

DR. RAUSCHKOLB: This seems to be one of the infectious granulomas, such as Aleppo boil.

DR. NETHERTON: I have seen one very similar case, without crusting, in a man with syphilis. It seemed to be an elephantiasis, and did not respond to treatment.

LICHEN PLANUS WITH ATROPHY. Presented by DR. COLE and DR. DRIVER.

R. B., a man, aged 43, had been treated for latent syphilis at Johns Hopkins Hospital from July to November, 1929. When he came to the Lakeside Hospital Clinic on November 18 he complained of an itching eruption of two weeks' duration. At that time there was a sparse eruption on the trunk, the lesions being slightly infiltrated, dull red, flat scaly papules, the size of a dime and smaller.

DISCUSSION

DR. OSBORNE: The distribution, itching and pigmentation are in favor of a diagnosis of lichen planus.

DR. BARNEY: There are also lesions of lichen planus in the mouth.

DR. NETHERTON: I agree with a diagnosis of lichen planus.

NEW YORK DERMATOLOGICAL SOCIETY

J. FRANK FRASER, M.D., *Secretary*

Jan. 28, 1930

PAUL E. BECHET, M.D., *President*

A CASE FOR DIAGNOSIS. Presented by DR. HANS J. SCHWARTZ.

H. G., a jurist, gave a past history of no importance except that he was troubled with heart burn, constipation, indigestion, flatulence and a dull pain on the right side of the abdomen. A complete physical examination made three years prior

to consultation revealed nothing of note except abdominal distention and a slight tenderness over the region of the gallbladder. The Wassermann test was negative; the urine was negative for albumin and sugar; the chemical examination of the blood was negative except that there was 3.44 mg. of uric acid per hundred cubic centimeters. The duodenal contents were negative except for a small number of pus cells, and streptococci were found on culture.

On Jan. 16, 1926, a series of gastro-intestinal examinations by Dr. W. M. Priest showed a hyperacid stomach with adhesions involving the prepyloric area, the antrum and the cap; these were the results of a chronic gallbladder disease. There were also adhesions and fixation of the hepatic flexure, due to the same cause. There was marked hyperperistalsis throughout the small and large bowel, with marked spasticity. There was distinct evidence of deformity involving the lower part of the cecum, probably due to a pathologic retrocecal appendix. There was evidence of a pathologic gallbladder with stones.

On March 24, 1926, a roentgen examination of the gallbladder after the manner of Kerasol showed the same peculiar area of density, suggesting an hour-glass contraction of the gallbladder. These films did not show the areas of mottling in the most dependent part, as well as the first films; indistinctly, faint areas of decreased density were noted; these were probably due to deposits of cholesterol or small cholesterol stones. The films taken after a meal some three hours later showed fair function, the density having diminished considerably. The uppermost shadows seemed more dense than the lower. There was distinct evidence of a pathologic appendix, with marked spasticity of the entire colon and some redundancy of the sigmoid. This was the probable cause of the constipation.

Cystoscopic examination for suspected kidney stone gave negative results.

The skin condition on the lower extremities began one year before presentation without any special cause. It began as a red macule over the right inner malleolus, which spread irregularly and ulcerated. When the patient was presented, there were patches of telangiectasia, pigmentation and purpuric spots on both legs between the knees and the ankles. There was some erythema and slight desquamation in places. On the inner aspect of each ankle, there was a superficial ulcer about the size of a dime. The eruption had been progressive and had caused no subjective symptoms.

Laboratory observations and chemical examinations of the blood showed: sugar, 0.003 per cent (93 mg.); urea nitrogen, 29.9 mg. per hundred cubic centimeters; uric acid, 3.3; creatinine, 2, and chlorides, 0.42 per cent (425 mg.).

The stools showed large quantities of gram-positive bacteria which, on culture, belong to the putrefactive group of anaerobic bacteria. A later culture showed *Bacillus welchii, Vibrio septicus.* Cultural examination of the duodenal juices obtained through a sterile duodenal tube, showed the presence of streptococci and unidentified gram-positive bacteria.

The blood count showed: neutrophils, 64 per cent; lymphocytes, 30 per cent (large 20, small 8); mononuclears, 2 per cent; transitionals, 2 per cent; eosinophils, 2 per cent.

DISCUSSION

DR. WALTER J. HIGHMAN: I had the pleasure of seeing the man as a patient last summer, and he presented then the same picture shown here. I made no metabolic studies. The condition was similar to many others that I have seen, and my impression was that it was a disease of the smaller vessels of the skin of the lower extremities, not an uncommon disease and it is always a question whether it will develop into ulcers or the formation of telangiectases, with or without pigmentation, and with more or less necrosis according to the vessels involved. I cannot suggest any particular name for the condition except dermatitis cruris, or inflammation of the skin of the leg, if English is preferred. I do not think we know anything more than this about the subject.

DR. HENRY H. WHITEHOUSE: It strikes me as the type of case that begins as a traumatic dermatitis with purpura and subsequently ulcerates. I do not see why we cannot call it dermatitis hemostatica.

DR. FRED WISE: I agree with Dr. Highman.

DR. GEORGE M. MACKEE: The case might be placed in the category of dermatitis hemostatica, as suggested by Dr. Whitehouse, which corresponds with what Dr. Highman said. I do not know what the cause is, and therapeutically I do not know what to suggest except soothing local remedies, proper twenty-four hour regimen, support of circulation and perhaps ultraviolet radiation. In any event, the therapy must be experimental rather than specific. I do not think that the investigation made, which has been quite thorough, included a biopsy. That fact may be of value both therapeutically and diagnostically. The cause may be toxic or due to poor local circulation. The toxemia should be overcome if possible.

DR. HANS J. SCHWARTZ: I saw the patient last June, and to the best of my recollection, the picture was the same then as now. Of course, Dr. Jablons brought the man around with the hope that we might get some suggestion as to etiology and therapeutics. Personally, I think a further careful study of the infection of the intestinal tract might prove fruitful. I will report the result of this discussion to Dr. Jablons, who asked me to express his thanks for the courtesy shown him.

DR. CHARLES M. WILLIAMS: This is not an ordinary case of dermatitis hemostatica. The patches are too discrete; some are too high up on the legs and there is too much normal skin below and between the patches. The patches show pigmentation and atrophy with little subjacent thickening, and around them are many red-pepper spots. The case seems to me to belong in the large and ill assorted group which includes Majocchi's disease and poikiloderma. The etiologic factor in this case may very well be the chronic infection of the gallbladder.

DR. HANS J. SCHWARTZ: The bacteriology of the intestinal tract and the gallbladder has been studied thoroughly. There has been the question of removing the gallbladder; a number of physicians are advising this procedure rather strongly. Personally, I agree with Dr. Williams in his general conception of the case.

DR. WALTER J. HIGHMAN: I agree with Dr. Williams. I was not thinking of simple dermatitis hemostatica, because I question whether that has much to do with the condition of the leg. Nevertheless, the majority of the people do not have that type of vascular disturbance at almost any age unless their occupation, or some previous disease leading to phlebitis, has caused an obstruction. I think that all of this group, angioma serpiginosum, Majocchi's disease and the like, represent vascular disease per se, and the present case is no exception, whatever the underlying cause is.

DR. GEORGE M. MACKEE: I called it dermatitis hemostatica, with the conception that it is a chronic dermatitis of the legs which does not fall under any other definite entity, such as psoriasis, and which is due to a local vascular disturbance from toxemia, cardiovascular or renal dysfunction, varicose veins., etc., occurring in the dependent portion of the body—a stasis. At times it is due to tight garters; traumatism, bacteria and toxemia are also causes.

FOLLICULITIS ULERYTHEMATOSA RETICULATA. Presented by DR. GEORGE M. MACKEE.

The case of Mrs. G. M., aged 31, formerly Miss G. B., was used as the foundation for an article, entitled, Folliculitis Ulerythema Reticulata, by the presenter in collaboration with Dr. Parounagian in 1918 (*J. Cutan. Dis.* **36**:339, 1918). The eruption exhibited by the patient was described in that article, and clinical and histologic photographs were published.

The reticulation had markedly decreased but had by no means disappeared. Either the ridges had flattened or the depressed areas had been elevated, because the skin surface was even more reticulated than formerly. The follicular plugs had disappeared, but there were a few milia. Undoubtedly, this moderate improvement had been spontaneous. The cheeks were still somewhat flushed, but less than formerly; also the skin felt softer. The condition was no longer active but had left sequelae in the shape of reticulated atrophy, or scarring.

In the light of modern knowledge, roentgen therapy should not be given in this disease, or at least very little should be given, for two reasons: because it accomplished little if any benefit, and because the disease caused degeneration, atrophy and scarring. The patient had received sixty-nine fractional treatments between 1918 and 1921 inclusive. A few of the treatments had consisted of half-erythema doses. Erythema may have occurred; if so, it had been overlooked.

There was very slight telangiectasia and slight wrinkling about the mouth, suggesting atrophy as a sequel to excessive roentgen ray dosage. One month before presentation, after an observation hiatus of nine years, the patient entered the clinic and exhibited two basal cell epitheliomas about the size of a dime on the right side of the jaw and an epithelioma of the same type the size of a split pea on the right cheek. The duration of the lesion was about two years. The lesions on the right cheek were excised, and slides were exhibited at the meeting. The lesions on the right cheek were excised, and slides were exhibited at the meeting. The lesions did not develop on an antecedent keratosis, and there were no keratoses on the face when the patient was presented.

An interesting question was whether or not the epitheliomas would have occurred in the absence of the skin disease or in the absence of roentgen treatment. Only two articles had appeared on the subject of this disease since the publication by MacKee: one by Darier and one by Knowles. The disease undoubtedly was a rare one, as not more than eight cases could be found in the literature.

DISCUSSION

DR. EUGENE F. TRAUB: This is a very interesting case, particularly because of the marked telangiectasia, wrinkling and mild degree of atrophy. The question is how much bearing may the roentgen treatments given fifteen years previous to this time have had on the production of these changes. If due to the radiation, it is possible that this may in time predispose to similar changes in the many patients with acne now treated in this manner.

DR. RAY H. RULISON: As Dr. Traub has pointed out, it is the only case that has been shown with end-results, and the end-results may be somewhat changed by the treatment. I do not see how we can form any definite opinion unless a comparison is made with some other case in which this treatment has not been given.

DR. CHARLES M. WILLIAMS: Did the disease begin as a single group on the cheek and then spread all over the cheeks, or was it generalized from the start? As to the epitheliomas, the one on the side of the nose is apparently cured, the one on the cheek has not been treated, and the one on the forehead has evidently been excised, but there is a pearly scar and apparently it has not been cured.

DR. FRED WISE: I should like to know whether the epitheliomas are considered due to excessive roentgen treatment or whether they appeared in combination with the original disease. I have the impression that they are not due to the roentgen treatment, but I may be wrong.

DR. JOHN E. LANE: I agree with Dr. Wise; the epitheliomas do not seem to have been developed by the roentgen treatment; they are isolated and there are no keratoses in the affected area.

DR. GEORGE MACKEE: I think that most of the sequelae and disfigurement are due to the disease. There is a distinct reticular atrophy over both cheeks, due to the disease. The only atrophy from the roentgen rays that I recognize is a little about the mouth, although there is perhaps some such atrophy all over the face. It is true that keratoses and epithelioma may develop on roentgen ray sequelae, even though such sequelae are of inconspicuous type, although such occurrence is unusual. Epithelioma caused by roentgen ray sequelae are invariably of the squamous cell type, and they always develop in an antecedent lesion of some kind, such as an indolent ulcer or a keratosis, neither of which was present in this case. I have never heard of a basal cell type of roentgen ray epithelioma. So far as concerns the epitheliomas in this case, I think that they are coincident, but of course I am not certain.

Dr. Traub suggested that some of our patients with roentgen ray acne may in subsequent years show similar results. I doubt it, for this patient received over four times the amount of roentgen rays usually given for acne vulgaris.

In answer to Dr. Williams' question, the disease did not begin as one lesion and spread, but began all over the cheeks when the patient was 8 or 9 years of age; at first it was inconspicuous, then it became more conspicuous, then remained stationary, and finally showed considerable involution.

Dr. Paul E. Bechet: Ordinarily, telangiectasia is unusual in this disease. This patient presents a definite telangiectasia. I should therefore like to ask Dr. MacKee his opinion as to whether the roentgen treatment, or the disease itself was responsible.

Dr. George M. MacKee: I think that it is partially due to the disease, for the patient had an exceedingly florid condition when it began, so I imagine the telangiectasia is the end-result of the disease, and perhaps also of the roentgen rays. It is not usually a feature of the disease.

Periphlebitis Nodularis Necrotisans. Presented by Dr. George M. MacKee.

G. M., aged 20, an American premedical student, entered the Dermatological Department of the New York Post-Graduate Hospital three weeks prior to presentation. The eruption, which was of two years' duration, was limited to the legs, all aspects of which were involved. It consisted of deep-seated hard, slightly painful nodules, the size of a walnut at first, later enlarging to the size of a silver dollar. Most of the nodules ulcerated, and the ulcers lasted for many months before healing occurred.

When the patient was presented, there were numerous large and small ulcers, large and small nodules, scars and areas of pigmentation scattered over all surfaces of both legs. One small, new, deep nodule had been excised. Under the microscope there was a dense infiltration of round cells in the lower cutis but mostly in the fat, and most marked around thickened blood vessels. There were no giant cells or epithelioid cells; there were a few plasma cells. A slide was exhibited at the meeting.

The patient was underweight and looked anemic. He said that his lungs had been examined in the usual manner by a tuberculosis expert and with the roentgen rays, which gave negative results. There was no tuberculosis in the immediate family. He had received general and local ultraviolet and roentgen therapy, without apparent benefit. So far as could be ascertained, arsenotherapy had not been tried. The Wassermann test and urinalysis were negative. The titrated tuberculin test was also negative. A four plus positive reaction was obtained, but only with a dilution of 1:1,000, which was within normal limits.

A general pathologist had made a diagnosis of Kaposi sarcoma, based on the clinical appearance and a study of tissue which he excised.

The case was presented as one of periphlebitis nodularis necrotisans, with the understanding that this condition was a variant of Bazin's disease.

DISCUSSION

Dr. Henry H. Whitehouse: I am inclined to agree with that diagnosis. It seems to be allied to Bazin's disease, and that is the only thing I can think of as being the probable diagnosis.

Dr. J. Frank Fraser: The appearance of some of the lesions suggests the possibility of sporotrichosis. Sporotrichosis presents a histologic picture similar to that of erythema induratum. I favor the diagnosis of Bazin's disease.

Dr. Charles M. Williams: I should like to know something about the therapeutics. The boy is leading the worst sort of life possible. I think he had better go to the Adirondacks or out West, or anywhere out of the city. He should have plenty of fresh air and sunlight, and cod liver oil.

DR. EDWARD R. MALONEY: He was a patient in the hospital some time ago and was seen by the pathologist who made a clinical and pathologic diagnosis of Kaposi's sarcoma. Later he was seen by Dr. Fox and myself, and some others. We could not see any evidence of Kaposi's sarcoma, and made a diagnosis of tuberculosis, which is evidently correct.

DR. WALTER J. HIGHMAN: I should like to know what periphlebitis nodularis necrotisans means. Is it a clinical or a histologic diagnosis? If clinical, there should be nodules; if histologic, we should see some association of the infiltration with veins that is peculiar. How can the veins or other vessels be escaped in the skin. It is like Yankee Doodle who could not recognize the town because there were so many houses. *Ipso facto*, clinically and histologically, the term is nonsense. Clinically, it is the picture of Bazin's disease. I object to any serious consideration of any such term as periphlebitis nodularis necrotisans.

DR. PAUL E. BECHET: I do not quite agree with Dr. Highman. Some months ago I presented a case before this society as an aberrant type of Bazin's disease, and this fancy name was suggested by some of the members. The patient had distinctive lesions, entirely unlike Bazin's disease. They consisted of hard, subcutaneous tumors and nodules, occurring in chains along the inner sides of both legs, near the tibia. There were also hard, boardlike indurations, which on retrogression left the skin sunken and depressed, but without ulceration. Since then, an exactly similar case has been observed. I think that the designation periphlebitis necrotisans has a certain field in describing similar cases. It may or it may not be an aberrant form of Bazin's disease; it certainly is not typical erythema induratum. I do not believe that Dr. MacKee's case belongs in this particular category. It seems to me more like a superficial type of Bazin's disease with an unusual amount of superficial ulceration.

DR. WALTER J. HIGHMAN: First, as to the rarity of Bazin's disease in men: It may be rare, but it is seen; second, my objection to the term periphlebitis nodularis necrotisans is that it is neither a clinical nor a histologic concept that can be validly established. What is more serious is that this patient's lesion was not histologically tuberculous. Any one who has ever examined tissue from tuberculous lungs knows that many pieces from a lung known to be tuberculous do not show tuberculosis. The same holds with the skin. Here is a boy with fifteen or twenty lesions, and one selected for study. How can you tell if it was an indicated one? Considering the general aspect and appearance of the patient, the negative aspect of the slide from the standpoint of tuberculosis does not rule out tuberculosis. In my opinion it would be wise to examine more of the lesions and perform a guinea-pig inoculation; for the question is not whether this boy has Bazin's disease, but whether he has tuberculosis. Personally, I think he has, but it may be another type of infection with a similar picture. But I do not want to see our organization endorse such a term as the presenter used, for clinically and microscopically it is utter nonsense, even if it did originate on hallowed continental ground.

DR. GEORGE M. MACKEE: Lewandowski, I think, reported a series of cases which closely resembled Bazin's disease clinically but which presented differences, mainly histologic, which led him to believe they represented a different entity. The infiltration was in the subcutis, but tubercles were never present although giant cells and epithelial cells were occasionally encountered. As I recall, the cases he described occurred in both men and women; the lesions were rather more on the anterior than the posterior surface, and occurred in older people. If my recollection is correct, it was Lewandowski who applied the term periphlebitis nodularis necrotisans to these cases. I am in sympathy with Dr. Highman's remarks, but am unwilling to discard the entity without further study. The two conditions, Bazin's and periphlebitis nodularis necrotisans, may be the same and they may be different. I doubt if we are yet ready for a final verdict. If it is true that we can have Bazin's disease without a suggestion of tubercle formation, then we may conclude that the two conditions are the same. Perhaps light may be thrown

on this not only by histologic examinations but by more care in tuberculin tests and guinea-pig inoculations. We have not yet had time to examine this patient thoroughly, but will continue doing so. I agree with Dr. Williams that what the patient really needs is general treatment for tuberculosis in a tuberculosis health resort, but I am going to endeavor to cure him at home with rest, high vitamin diet, generalized ultraviolet radiation, graduated exercise, vocational therapy and tuberculin therapy, and, perhaps, aurotherapy later.

EPIDERMOLYSIS BULLOSA HEREDITARIA. Presented by DR. GEORGE M. MACKEE.

M. M., a boy, aged 4 years, entered the Dermatological Department of the New York Post-Graduate Medical School and Hospital three days prior to presentation. The disease began when the child was a few weeks old and had been continuous. When presented, there were hemorrhagic bullae of various sizes on the hands, face, ears, arms and legs. Occasionally, lesions developed on the trunk and buttocks. They occurred only after injury. The skin immediately surrounding the bullae was erythematous. The skin of the elbows and knees was slightly atrophic. Nikolsky's sign was absent; there were numerous semitranslucent, cystlike lesions about the size of a millet seed, on the dorsae of the fingers. An interesting and very unusual feature was an innumerable number of these cystlike lesions scattered over the anterior surfaces of the thighs and legs. The family history was unimportant, and there had been no consanguinity.

PERIPHLEBITIS NODULARIS NECROTISANS. Presented by DR. FRED WISE.

J. B., a housewife, aged 50, from the New York Post-Graduate Clinic, stated that about Dec. 1, 1929, she had noticed pain and tenderness over the posterior aspects of both thighs. Questioning revealed no history of the use of iodides or bromides. The Wassermann test of the blood was negative.

The back of the right thigh presented three infiltrated erythematous areas the size of a palm, and there was a similar lesion on the back of the left thigh. A biopsy from the border of one lesion, and one from the center of another was reported by Dr. David Satenstein as periphlebitis nodularis necrotisans.

DISCUSSION

DR. GEORGE M. MACKEE: Clinically, the case resembles what was formerly called cold abscess—in other words, tuberculosis of the hypoderm—more than any cleancut entity such as Bazin's disease, sarcoid or periphlebitis modularis necrotisans.

DR. WALTER J. HIGHMAN: I agree with what Dr. MacKee said. Incidentally, lesions along a lymph vessel must be in chains. The mere fact that there is a chainlike distribution of nodules does not mean anything more than the anatomic fact that vessels are long, and lesions following their course must have such a distribution.

DR. LANE: The lesions look to me as though there probably had been a thrombosis followed by a periphlebitis and a secondary cellulitis of the surrounding tissue.

DR. GEORGE M. MACKEE: The pathologic histology in this case does not correspond with the diagnosis. The pathologic picture is simply compatible with what has been called periphlebitis nodularis necrotisans.

DR. RAY H. RULISON: The condition looks very much like what one would expect from Dr. Lane's discussion; but both legs are involved, and it does not seem likely that the patient would have lesions on both thighs at the same time without some definite history to account for it.

DR. FRED WISE: I saw the case some time ago when there were no signs of cellulitis, and made the diagnosis of Bazin's disease without hesitation; but now I hesitate about that diagnosis, and will accept what Dr. Lane said as to cellulitis. There is a cellulitis there, but I think it is a secondary manifestation.

ALOPECIA. Presented by DR. JOHN F. FRASER.

A woman, aged 20, unmarried, began to lose her hair during the August preceding presentation. At the time of examination there was a generalized thinning of the hair on the scalp. Her general health was good, and there was no history of a previous illness.

The case was presented for suggestions as to the etiology and treatment.

DISCUSSION

DR. JOSEPH J. ELLER: One might think of the possibility of trichotillomania. Against this diagnosis, is the presence of diffuse alopecia. The patient looks highly nervous. Patients with a compulsion neurosis find ingenious methods of producing lesions.

DR. GEORGE M. MACKEE: I examined the girl very carefully, and thought as Dr. Eller did of trichorrexis nodosa, trichotillomania, etc., but these can probably be ruled out because of brittleness, lack of luster, breaking, lack of nodes and alopecia. The patient has seborrhea of the scalp, but I do not think that is a factor in this case, for the distribution is different from alopecia due to seborrhea. The unusual distribution of the alopecia, together with dryness, lack of luster and brittleness suggest endocrine dysfunction. I suggest that an endocrine examination be made by an endocrinologist. It is possible that something can be accomplished by glandular therapy together with the usual local remedies. We occasionally encounter such cases.

DR. WALTER J. HIGHMAN: I substantially agree with Dr. MacKee.

DR. JOHN E. LANE: The appearance of the patient is typical of that in occasional cases of hypothyroidism and myxedema. When there is such thyroid trouble, proper treatment occasionally leads to partial regrowth of the hair. When no such trouble is present, in my experience treatment has been entirely useless. I cannot agree with Dr. Eller in thinking that the hair has been broken off by the patient. All of the hairs are shorter than normal, and there are no wholly epilated areas.

DR. PAUL E. BECHET: Dr. Lane's remarks are most pertinent. I also have observed this same moth-eaten alopecia; it seems to occur most frequently in stout women between the ages of 20 and 40, who have abnormally prominent malar processes, sparse eyebrows, very dry lifeless hair and dry skin. I believe that it is caused by hypofunction of the thyroid. If Dr. Fraser would investigate the case from that point of view, he might possibly get some favorable result.

PARAPSORIASIS. Presented by DR. FRED WISE.

F. O., a salesman, aged 71, from the New York Post-Graduate Clinic, stated on the day previous to when he was first seen, that the eruption had been present for four years; that new spots came out occasionally, but that none of the spots ever disappeared.

The eruption consisted of numerous slightly erythematous scaly plaques along the flexor surface of both arms and forearms. Some of these were slightly infiltrated.

SCLERODERMA. Presented by DR. GEORGE M. MACKEE.

P. B., an Italian barber, aged 40, was sent from the Dermatological Department of the Post-Graduate Medical School and Hospital. Ten years before presentation, he noted a dark erythema on the dorsal surface of the fingers, which very slowly spread to the hands and wrists. This did not attract much attention until seven months before presentation, when his eyelids became red and edematous. Very soon after this, a rash appeared on the neck and chest, which later spread to the abdomen. The eruption was steadily progressive; there was never any improve-

ment. The subjective symptoms were weakness and itching; otherwise, the past history and the family history were unimportant. The patient had been under observation for one month.

He had been fairly completely examined. The urine and blood were tested for arsenic after three intravenous injections of sodium thiosulphate, with negative results. Urinalysis and chemical examination of the blood gave negative results. There was a bilateral sinusitis, and the tonsils were pathologic. Endocrine examination gave negative results, as did the Wassermann test of the blood. The blood count was normal, including hemoglobin. There was edema of the uvula, with dysphagia, which was probably caused by the sinusitis. There was an inguinal hernia on the left side. The patient was of a neurotic type.

The skin exhibited a progressive atrophy, preceded by a pronounced dusky-red erythema. When the patient was presented, the eruption occupied the dorsal surfaces of the hands, all aspects of the forearms and arms, but was most marked on the anterior surfaces, the thighs, chest, abdomen and back, with slight involvement of the face. The eyelids were slightly edematous. There was a pityriasis of the scalp, with atrophy and alopecia above the ears. The early stage of the eruption was erythema; this was followed by very slight thickening of the skin which turned a shiny white or grayish-white color. The entire chest had this appearance, at the lower edge of which was a wide band of erythema, indicating that in this location the condition was progressing downward. In some places, such as the hands, the erythema persisted, although the skin of the forearms resembled parchment. There were areas on the chest that suggested the parchment type of scleroderma. Here and there were patches that suggested the end-stage: soft, pliable skin with delicate wrinkling or atrophy.

Tissue had been removed from an area of erythema and from an area of superficial sclerosis. Slides were exhibited at the meeting of the society. Slides representing the early stage showed nothing but mild inflammation; no degeneration was noted. The other section showed increase of collagen and some degeneration suggestive of a mild, superficial scleroderma.

The patient had improved while in the hospital. Treatment had consisted of rest, light exercise, cocoa-butter massage, very small doses of thyroid, colloidal baths, encouragement, a few mild roentgen treatments for the pruritus, diet, colonic irrigations, antipruritic topical remedies, injections of afenil, etc., all of which was empiric.

DISCUSSION

DR. WALTER J. HIGHMAN: I have nothing much to offer in my conception of this case. The man certainly seems to have a superficial atrophy; whether scleroderma or acrodermatitis, with mild anetoderma, I do not know. Nevertheless, it seems to have begun on the fingers, so that gives a little color to the latter point of view. The itching is a curious feature. I know that at times the atrophies begin with itching. The microscopic picture is inconclusive. The fixative in the present specimen is one that always confuses me. In the old days when I used the trinitraphenol fixative, I saw more slides suggesting scleroderma than before or since.

DR. HENRY H. WHITEHOUSE: I do not favor the diagnosis of scleroderma. The character of the lesions, accompanied by atrophy, suggests to me acrodermatitis chronica atrophicans, although I have never seen a case so generalized; but I think that prolonged study and observation will probably elucidate this fact.

DR. J. FRANK FRASER: I would suggest that the case is a combination of dermatitis atrophicans and scleroderma. The skin is too loose for a straightforward scleroderma. Histologically, the condition looks like scleroderma. The appearance of the elastic tissue does not militate against that diagnosis. The elastic fibers are resistant and remain normal for a long time.

DR. CHARLES M. WILLIAMS: This does not strike me as a case of scleroderma. The skin is not thick; there is no hide-bound condition, no hardness. The early stage seemed to be an inflammatory process, as shown by the advancing

red border on the chest and by the red patches on the dorsal surfaces of the fingers. The clinical picture corresponds closely to that of dermatitis chronica atrophicans, and I believe it is an aberrant type of that disease, although there is no great atrophy of the extremities. As therapy in these cases is at the best uncertain, and as some cases of trophic disturbances of the skin seem to be due to chronic arsenical intoxication, I would recommend injections of sodium thiosulphate.

DR. WALTER J. HIGHMAN: The patient has lost 43 pounds (19.5 Kg.), which may account for the wrinkling of the skin.

DR. EUGENE F. TRAUB: It is apparent from the discussion that the clinical picture presented by the patient does not fit either the diagnosis of scleroderma or acrodermatitis chronica atrophicans. A diffuse generalized lupus erythematosus would, on the other hand, present this type of telangiectasis, adherent scaling and atrophy. The onset on the hands or face and the comparatively rapid spread of the eruption in six months' time, with a distinctly demarcated inflammatory border, also favor this diagnosis.

DR. GEORGE M. MACKEE: Dr. Fordyce reported a case of symmetrical cutaneous atrophy with erythema (*J. Cutan. Dis.* **22**:155, 1904). That case began just as this did, with erythema of the hands and forearms, followed by a thin translucent skin, but not with parchment-like skin, as in this case. Then there have been cases reported in the past, a number of them, of atrophia maculosa cutis, which began with erythema and ended in atrophy, but none of these cases seem to correspond with mine. As Dr. Williams said, my case resembles acrodermatitis chronica atrophicans, and if we can conceive of a universal case of that kind, this case would fall in that category.

Several times in this discussion it has been stated that scleroderma is always hide-bound. The skin is not hide-bound in the lichenoid type of scleroderma nor, as a rule, in acrodermatitis chronica atrophicans, although, of course, it may be.

Disseminated lupus erythematosus can, I think, be ruled out by the microscopic examination and because it is too definitely progressive. Nevertheless, the suggestion is a good one, especially because lupus erythematosus may at times produce parchment-like atrophy. Clinically and histologically, the case suggests a very superficial scleroderma preceded by erythema and followed by atrophy.

ANGIOMA OF THE TONGUE. Presented by DR. JOHN F. FRASER.

The patient was a middle-aged man from the Cornell Clinic. The lesion, which was a growth on the tip of the tongue, about the size of a pigeon-egg, had been present since birth; but about ten years prior to presentation it had begun to grow and attained the size exhibited. The case was presented for therapeutic suggestions.

DISCUSSION

DR. GEORGE M. MACKEE: Roentgen rays and radium are ruled out in doses that are compatible with safety. These are of no value in angiomas that have reached their maximum development, so radiation of any kind is ruled out here. The only things I can suggest therapeutically are to leave it alone, destroy it with electrocoagulation, or possibly with the injection of sodium salicylate, or excise the growth.

DR. FRED WISE: I did not quite understand what Dr. MacKee said about the contraindication to radium seed implantation.

DR. GEORGE M. MACKEE: The required dosage, after the lesion has remained stationary for many years, is so great as to leave a tissue that is a menace to the patient. Good results are obtained in early cases, because we are dealing with immature, active or embryonic cells. After evolution has ceased, the cells are of the mature or fixed or adult type, and yield no better to radium than cells of the surrounding normal tissue. Radium implants will cure by ulceration, but

rarely by absorption in cases of fixed lesions, and scar tissue left after such treatment is the same as roentgen ray or radium skin, and is potentially dangerous. It is doubtful if small safe doses of radon by implantation would be of benefit.

DR. WALTER J. HIGHMAN: I think that surgical procedure is the method of election; more than that, I am not sure this lesion may not present some features of sarcoma, and at the present moment if it were mine, I would like the surgeon to cut it out and have it studied histologically.

DR. JOHN E. LANE: I do not see why anything but surgical removal should be considered in this case. It can be done quickly, safely, and satisfactorily, and in a week or ten days it will be over.

DR. JOSEPH J. ELLER: I think that this lesion should be removed by surgical procedure with the ordinary scalpel. I agree with Dr. MacKee that roentgen rays or radium should not be used in benign lesions of this kind on the mucous membranes, because the large dosage necessary would result in devitalized tissue which is prone to become malignant.

DR. J. FRANK FRASER: My impression was that these lesions frequently returned, and I would like to ask whether any one has seen any recurrences after surgical removal; also, whether good results from electrocoagulation have been observed. I do not share the view that it is sarcoma.

DR. GEORGE M. MACKEE: I have not seen recurrences if the excision was well done on fixed cases; they occur in children in whom one is dealing with evolving lesions. I have seen good results with electrocoagulation, but it causes much destruction and ulceration and is a long time in healing. I prefer excision.

A CASE FOR DIAGNOSIS. Presented by DR. PAUL E. BECHET.

M. G., aged 30, stated that he had had an eruption on the lower parts of his legs for fifteen years. It consisted of reddish to yellow puncta about the size of a pinhead, aggregated into patches, several of which were scaly, and others deeply pigmented. There was a very moderate varicosity on both legs. The diagnosis rested between dermatitis hemostatica and Schamberg's progressive pigmentation.

DISCUSSION

DR. GEORGE M. MACKEE: I disagree with the diagnosis of Schamberg's disease. I think that the condition is dermatitis hemostatica. There is deep edema of the legs and some erythema; in other words, dermatitis with hemorrhage and pigmentation, all of which is secondary to poor local circulation caused by varicose veins, toxemia or renal or cardiac disturbance, plus scratching and rubbing.

DR. CHARLES M. WILLIAMS: The condition is ordinary dermatitis hemostatica with pigmentation.

LICHEN NITIDUS. Presented by DR. RAY H. RULISON.

H. F., aged 18, from the Cornell Clinic, was an office boy of American birth and ancestry. His personal and family histories were unimportant. The trouble for which he was examined was first noticed two years prior to presentation. The eruption was entirely confined to the penis. Careful search of the rest of the body showed no similar abnormality. It consisted of many glistening, round and polygonal, skin-colored, discrete, slightly elevated or flat papules with umbilicated centers. The eruption was most marked on the corona and prepuce. There had been no disturbance of sensation.

The results of the Wassermann test were negative. Intradermal skin tests, made with various dilutions of old tuberculin, gave the following results: 1:50,000, no reaction; 1:5,000, moderate reaction; 1:1,000, marked reaction. No histologic examination had been made.

DISCUSSION

DR. GEORGE M. MACKEE: I agree with the clinical diagnosis of lichen nitidus.

DR. WALTER J. HIGHMAN: I think that the condition is lichen nitidus.

DR. EDWARD R. MALONEY: While the location and type of papule suggest the diagnosis of lichen nitidus, yet the eruption does not seem to be characteristic of that disease. The papules are more round and tend to become confluent, they are not packed closely enough, and are not shiny. I think that it would be easy to make a positive diagnosis by cutting out a lesion and examining it under the microscope.

DR. RAY H. RULISON: The case was presented with some diffidence because of the points mentioned by Dr. Maloney, and because no other lesions were found on the body.

A CASE FOR DIAGNOSIS. Presented by DR. FRED WISE.

G. S., aged 28, born in Arabia, a patient from the Post-Graduate Clinic, stated that his condition was of four years' duration. He had been cured of his first attack with roentgen treatment. Two years prior to presentation he had had a second attack which had persisted ever since. The lesions were located on the right leg and the neck; there were also areas of scaling on the elbows. On both sides of the neck was a small papular eruption on a hyperpigmented skin; the papules varied in size from that of a pinhead to that of a lentil, and were yellowish brown and mainly discrete; they were not definitely polygonal. The lesions on the neck greatly resembled neurodermite. On the lateral surface of the lower part of the right leg were two patches of confluent papules; these patches had a violaceous hue and a surface reticulation strongly suggesting lichen planus.

The case was presented for a differential diagnosis between lichen planus and neurodermite. It was difficult to decide how the diagnosis should be charted. There were no lesions in the mouth or on the glans penis.

DISCUSSION

DR. WALTER J. HIGHMAN: I think it is a case of neurodermite because of the lesions on the neck; it is questionable whether a definite diagnosis could be made on the lesions of the leg. The key to the situation is the nonconfluent, still isolated papules seen on the neck, which Brocq described in his early reports on neurodermite.

DR. CHARLES M. WILLIAMS: This is a case of neurodermite. There is no doubt about it.

ERYTHEMA ELEVATUM DIUTINUM. Reported by DR. GEORGE M. MACKEE.

Dr. MacKee reported on this case which had been presented at a previous meeting. The subsequent histologic examination and study were inconclusive, and no diagnosis had been established. The patient had been treated with refrigeration and was improving. The results of the bacteriologic examination were negative. The microscopic examination of the tissue showed only inflammation, and did not show degeneration nor necrosis.

DERMATOPHYTID COMPLICATING TINEA CRURIS. Presented by DR. CHARLES M. WILLIAMS.

This article will appear in full in a later issue.

Book Reviews

THE LONG TREK. AROUND THE WORLD WITH CAMERA AND RIFLE. By RICHARD L. SUTTON, M.D., Sc.D., LL.D., F.R.S. (EDIN.), and RICHARD L. SUTTON, JR., A.M., B.Sc., M.D. Price, $5. Pp. 347, with more than 200 illustrations by the authors. St. Louis: C. V. Mosby Company, 1930.

Sutton has been on another great hunting trip, the longest and greatest he has ever taken; in this book he has told about it. He went from Kansas City to Hamburg, thence around the western point of Europe, through the Mediterranean and the Red Sea down to Tanga on the east coast of Africa, and then on a hunting trip in the most isolated part of East Africa; from thence he went straight across the Indian Ocean to Singapore, and on a hunting trip in Indo-China; then to Hong Kong, Shanghai, across Japan and across the Pacific and back to Kansas City. It was a long trip for a man with a fixed occupation. He is the great traveler and the big hunter among contemporary physicians; as far as we know, the big hunter of all time and, unless Marco Polo was a physician, the big traveler also.

The book is of interest, full of fascinating glimpses of scenes, animals, people and adventures in the most out of the way parts of the world. For physicians, I think that the illustrations are of interest as they furnish great diversion. We cannot all go elephant and lion hunting in Africa or tiger hunting in India or Indo-China when the whim strikes us, but we can develop some worth while diversions.

Sutton has made himself as well known among big hunters as he is among dermatologists. He is to be congratulated on the safe completion of this remarkable trip. The reading of the book is worth the time of anybody.

DERMATOLOGY AND SYPHILOLOGY FOR NURSES, INCLUDING SOCIAL HYGIENE. By J. H. STOKES, M.D. Price, $2.50. Pp. 311, with 60 illustrations. Philadelphia: W. B. Saunders Company, 1930.

One can always read with interest and profit anything that Stokes writes, and this holds true, even for physicians, of this elementary book on skin and venereal diseases. The book is intended, of course, as a manual of practice, and is devoted, therefore, almost entirely to practical considerations. It emphasizes especially simple details that all physicians are supposed to know, many of which they have forgotten or do not know at all. There are the usual valuable summaries of facts in connection with the various subjects that one has learned to expect from Stokes. The first 150 pages are devoted to diseases of the skin. This is followed by 100 pages devoted to gonorrhea and syphilis, and 35 pages are given to the social hygiene of venereal diseases. These are of the same high quality as the chapter devoted to dermatology, and furnish the same sort of interesting reading. It is a worth while manual which any dermatologist can read with interest.

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